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Injury Rates, Limited Duty Days, Medically Not Ready Rates, and Injury Risk Factors in an Army Chemical Brigade, May 2013–June 2014

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14. ABSTRACT <p>A Chemical Brigade had reported a steady climb in injury rates and medically not ready rates. Purpose: The purpose of this evaluation was to examine injury rates, medically not ready rates, and injury risk factors in U.S. Army Chemical Brigade Soldiers. Methods: From May 2013 to July 2014, the Army Public Health Center (APHC) Injury Prevention Program administered electronic surveys to the brigade asking participants about personal characteristics, physical fitness training, injuries and tobacco use during the prior 12 months. Medical records were obtained from the Defense Medical Surveillance System (DMSS) and linked. Results: There were 1,099 men and 391 women who completed the survey (81% of the brigade) and on whom injury data could be obtained from the Defense Medical Surveillance System (DMSS). In the past 12 months 69% of the Soldiers had one or more injuries as determined by medical records. The top three types of injuries experienced as determined by survey data were strains/sprains, tears (muscle/ligament), and broken/fractured bones. Multivariate analysis indicated that male Soldiers who were older (26-29 years old/≤ 20 years old) (OR= 2.10, 95% CI, 1.21-3.65) (≥ 30 years old / ≤ 20 years old) (OR= 2.71, 95% CI, 1.62-4.56) and had previously smoked (ex-smoker/non-smoker) (OR= 1.51, 95% CI, 1.00-2.28) had a higher risk for injury. Analysis also indicated Soldiers who performed calisthenics with their unit (1-45 minutes per week/None) (OR = 0.42, 95% CI, 0.22-0.88) (> 45 minutes per week/None) (OR = 0.37, 95% CI, 0.20-0.69) and agility drills with their unit (1-45 minutes/None) (OR = 0.63, 95% CI, 0.44-0.89) had a significantly lowered risk for injury. Male Soldiers performing calisthenics during personal training (> 45 minutes per week/None) (OR= 0.63, 95% CI, 0.42-0.95) had significantly lower injury risk. The Chemical Brigade had 22% of Soldiers reporting a permanent profile during the last 12 months, while Army wide permanent profile incidence is 13%. During the 12 months covered by the survey, 35% of Soldiers experienced limited duty days (LDDs) from an injury and a majority were tears (muscle/ligament) (28%), strains/sprains (22%), and broken/fractured bones (13%). Conclusion: Injury rates (69%) and permanent profiles (22%) were higher compared to other brigades and Army wide data. Injury risk for men was associated with older age and ex-smokers. Lower injury risk was associated with calisthenics (unit and personal) and unit agility training. Injury risk for women was associated with smoking. The key recommendation was to continue smoking prevention/cessation program promotion and to provide further care to Soldiers with permanent profiles and Soldiers of increasing age by adjusting physical training programs through Master Fitness Trainers and the Army Wellness Center. Both can develop group or specific programs, as well as accommodate Soldiers seeking individualized physical training programs.</p>					
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and Injury Risk Factors in an Army Chemical Brigade
May 2013–June 2014

1 Summary

1.1 Overview

The Chemical Brigade (BDE) is comprised of five battalions of active duty Army personnel located at eight different locations throughout the United States. The BDE is in charge of a specific mission to counter chemical, biological, radiological, nuclear, and high yield explosive (CBRNE) threats.

The BDE reported observing a steady climb in injury rates and medically not ready rates. Since the BDE is located throughout the United States, it was difficult to determine why injury and medically not ready rates were increasing. In April 2013, the BDE requested assistance from the U.S. Army Public Health Command (USAPHC) (currently renamed the Army Public Health Center (Provisional) (APHC (Prov)) Injury Prevention Program (IPP) to conduct an epidemiological investigation.

1.2 Purpose

The purpose of this evaluation was to identify injury rates, medically not ready rates, and injury risk factors, and provide recommendations based on analysis for U.S. Army Chemical Brigade Soldiers.

1.3 Methods

In May 2013–July 2014, the APHC (Prov) IPP administered electronic surveys to the BDE asking participants about personal characteristics, unit and personal physical training (PT), fitness test scores, musculoskeletal injuries, health behaviors, leadership perceptions regarding injury and fitness, and access to trained health and fitness personnel (master fitness trainers or Army Wellness Centers) for the prior 12 months. Medical records for clinical visits for injuries were obtained from the Defense Medical Surveillance System (DMSS). Analyses included descriptive statistics as well as univariate and multivariate models.

1.4 Results

1.4.1 General

Approximately 81% of the Chemical BDE completed the survey (1,099 men and 391 women) and had medical record injury data. Overall personal characteristics of the Chemical BDE had an average age of 29.9 ± 7 years for male Soldiers and 26.6 ± 6 years for female Soldiers.

1.4.2 Injury Rates

Injury incidence for the BDE as calculated from medical records was 69% during the year covered by the survey. This is somewhat higher than rates calculated for other operational brigade medical rates, which range from 43% to 46%. When calculated from self-reported data, the injury rate for the Chemical BDE was lower (48%).

1.4.3 Injury Types and Causes

The top three types of self-reported injuries experienced in the 12 months covered by the survey were strains/sprains, tears (muscle/ligament), and broken/fractured bones. Lower extremities were the primary body region injured. Overuse was a primary reason cited for these injuries. Running was identified as the primary activity causing these injuries, followed by lifting heavy objects and other PT activities.

1.4.4 Profiles, Limited duty days (LDD)

The BDE had 22% of Soldiers on a permanent profile during the 12 months of the study as compared to 13% for all of active duty Army. During the 12 months in question, 35% of Soldiers experienced one or more limited duty days (LDDs) from an injury, a majority of which were tears (muscle/ligament) (28%), strains/sprains (22%), and broken/fractured bones (13%).

1.4.5 Risk factors

Multivariate analysis indicated that higher injury rates were experienced by male Soldiers who were older (26-29 years old/ \leq 20 years old) (odds ratio (OR) = 2.10, 95% confidence intervals (CI), 1.21–3.65) (\geq 30 years old/ \leq 20 years old) (OR = 2.71, 95% CI, 1.62–4.56) and had previously smoked (ex-smoker/non-smoker) (OR = 1.51, 95% CI, 1.00–2.28). Analysis also indicated lower rates were observed for Soldiers who spent 1–45 minutes performing agility drills with their unit (1-45 minutes/none) (OR = 0.63, 95% CI, 0.44–0.89). Male Soldiers performing calisthenics > 45 minutes per week during personal training had lower risk of injury compared to Soldiers that didn't perform calisthenics (OR = 0.63, 95% CI, 0.42–0.95). Participation in varied unit and personal distance running showed marginal lower risk for injury compared to non-runners.

Multivariate analysis indicated that female Soldiers who currently smoked had higher risk for injury (OR = 3.63, 95% CI, 1.53–8.64). Participation in personal aerobic endurance training 1–45 minutes per week was associated with a marginally lower risk for injury (OR = 0.50, 95% CI, 0.24–1.05), while personal aerobic endurance training > 45 minutes per week was associated with a marginally higher risk for injury.

1.5 Conclusions and Recommendations

Injury rates (69%) and permanent profiles (22%) of the 48th Chemical BDE were higher compared to other brigades and the Army as a whole. However, this BDE is comprised of a slightly older population and older age is a significant risk factor for musculoskeletal injury. Therefore, older Soldiers, might consider seeking guidance from Master Fitness Trainers (MFT) or the local Army Wellness Centers (AWC) for injury or profile appropriate adaptations to unit PT. A specially designed unit PT program for Soldiers 35 years or older that can provide alternative low-impact exercises in a group setting may help keep older Soldiers fit.

In addition to age, history of smoking is a significant risk factor which can be modified. Smoking prevention and cessation programs should continue to be a priority.

Overall, the Chemical BDE leadership should advocate healthier lifestyles and moderate PT programs by encouraging Soldiers, especially those with permanent profiles and of older age, to seek individualized care through AWC, MFT, and/or group PT programs overseen by certified

instructors. Unit leadership should consider alternating high intensity unit PT with moderate to easier PT days to prevent injuries due to fatigue or overuse.

Healthier lifestyles and moderate training regimen can reduce injuries and associated LDD, medically not ready rates, and number of personnel on profiles amongst the Chemical BDE. Another follow-up survey is recommended to reassess changes in physical fitness, permanent profiles and injury rates that have taken place within the brigade.

2 References

See Appendix A for a listing of references used within this report.

3 Authority

Under U.S. Army Regulation (AR) 40-5, Section 2-19, the U.S. Army Center for Health Promotion and Preventive Medicine (currently renamed the APHC (Prov)) is responsible for providing epidemiologic consultation and program evaluation services in the area of injury prevention and control to Army commands and direct reporting units upon request (Department of the Army (DA), 2007).

4 Background

The APHC (Prov) IPP's mission is to identify injury causes or risk factors that can be used in evidence-based initiatives to prevent injuries. The purpose of this evaluation was to examine injury rates, medically not ready rates and injury risk factors in U.S. Army Chemical Brigade Soldiers.

4.1 Oversight

The APHC (Prov) has oversight of this evaluation.

4.2 Overview

The Chemical BDE is comprised of five battalions of active duty Army personnel located at eight different locations throughout the United States. The BDE is charged with a specific mission to counter CBRNE threats.

The BDE reported observing a steady climb in injury rates and medically not ready rates. Since the BDE is located throughout the United States it is difficult to determine the extent of and reasons for these increasing rates. In April 2013, the Chemical BDE requested assistance from the APHC (Prov) IPP to conduct an epidemiological investigation to determine injury and profile rates and associated risk factors.

5 Methods

5.1 Data Collection

From May 2013 to July 2014, APHC (Prov) administered electronic surveys to the Chemical BDE Soldiers, asking about personal characteristics, unit and personal PT, fitness test scores, musculoskeletal injuries (types, location, and causes), health behaviors, leadership perceptions

regarding injury and fitness, and access to trained health and fitness personnel (master fitness trainers or Army Wellness Centers) during the prior 12 months.

Medical records containing personal characteristics and injury visit data (inpatient and outpatient International Classification Disease 9th Revision (ICD-9) diagnosis codes) from May 2013 to June 2014 were acquired from the DMSS, maintained by the Armed Forces Health Surveillance Center (AFHSC). Injury data for individuals were linked with roster information. Injuries were categorized into three injury indices groups using the primary (first) ICD-9 diagnosis code: overall injury (CII), overuse injuries (OII), and traumatic/acute injuries (TII). These Injury indices were developed by personnel in the IPP at the APHC (Prov). The CII captures all ICD-9 codes related to injuries. The OII captures the subset of musculoskeletal injuries presumably resulting from cumulative micro trauma (overuse-type injuries) and the TII captures a subset of musculoskeletal injuries resulting from a strong sudden force or forces being applied to the body.

Injury incidence and risk factors were analyzed for a 12-month period between May 2013 and June 2014.

Questions about temporary and permanent profile were also asked on the survey and rosters were provided with Soldiers that had either a permanent profile level 2 or 3, with the latter being more severe and requiring an evaluation by the Army Medical board. Definitions for permanent Profile levels can be found in AR 40-501, table 7-1.

5.2 Data Analysis

The Statistical Package for the Social Sciences (SPSS[®]), Version 19.0, was used for statistical analysis. Descriptive statistics (frequencies, distributions, means, standard deviations (SD)) were calculated for personal characteristics, PT, and physical fitness. Body mass index (BMI) was calculated as weight in kilograms divided by height in meters squared (kg/m²). BMI was categorized according to the Centers for Disease Control and Prevention (CDC) classifications for “normal,” “overweight,” and “obese” [1]. Current cigarette smokers were defined as those Soldiers who smoked at least 1 cigarette within the last 30 days and smoked 100 or more cigarettes in their lifetime. The cigarette smoking definition is based on CDC’s Behavioral Risk Factor Surveillance System (BRFSS) [2].

To identify potential injury risk factors among Soldiers in the brigade, injury risk ratios and 95% confidence intervals (95% CI) were calculated using the electronic medical record data on overall injuries. A multivariate logistic regression model was used to assess key factors for association with injury risk in this population. Variables entered into the model were chosen from the univariate models and had a significance of ≤ 0.05 or were determined necessary to control for specific known risk factors. Odds Ratios and 95% CI were calculated for each potential risk factor.

6 Results

6.1 Personal Characteristics

The total number of Soldiers in the brigade from May 2013 to June 2014 (counting all of the Soldiers even those who were only there part of the time period) was 1,352 men and 485 women. Approximately 81% of the brigade completed the survey (each of the five battalions reported with similar rates). The average age of the male Soldier was 29.9 ± 7 years and 26.6 ± 6 years for female Soldiers. The Chemical BDE was comprised of 40% Soldiers with E-3 to E-4 rank and

another 30% were E-5–E-6. Appendix B contains additional descriptive statistics on pages B-1–B-9.

Table 1 displays selected personal characteristic variables. The majority of Soldiers were male (74%), 26 years of age or older (61%), had BMI's in the overweight or obese (60%), and were non-smokers (67%).

Table 1. Specific Personal Characteristics Variables

Variable		Level of Variable	N (%)	Men n (%)	Women n (%)
Personal Characteristics		Gender	1,490(100%)	1,099(74%)	391(26%)
	Battalion	Battalion 1	161(9%)	96(9%)	41(11%)
		Battalion 2	444(25%)	251(23%)	95(24%)
		Battalion 3	409(23%)	274(25%)	80(21%)
		Battalion 4	441(25%)	250(23%)	109(28%)
		Battalion 5	342(19%)	228(21%)	66(17%)
	Age	17-20 years	146(10%)	82(8%)	64(16%)
		21-25 years	430(29%)	293(27%)	137(35%)
		26-29 years	289(19%)	203(19%)	86(22%)
		≥ 30 years	625(42%)	521(47%)	104(27%)
	BMI (kg/m ²)	Underweight (<18.5)	68(5%)	35(3%)	33(9%)
		Normal (18.5-24.9)	528(36%)	327(30%)	201(52%)
		Overweight (25.0-29.9)	664(45%)	528(48%)	136(35%)
		Obese (≥30)	217(15%)	202(19%)	15(4%)
	Smoker Status	Non-smoker	997(67%)	705(64%)	292(75%)
		Ex-smoker	181(12%)	151(14%)	30(8%)
		Smoker	312(21%)	243(22%)	69(18%)

6.2 Physical Training

Table 2 displays unit physical training variables. A majority of Soldiers participated in Unit PT (86%), which they rated as moderate to somewhat hard (66%). Approximately one half of Soldiers participated in the Physical Readiness Training (PRT) program (Army Field Manual 7-22, 2012) for unit PT (53%), ran 5–9 miles per week, and performed calisthenics and cross-training drills > 45 minutes per week.

Table 2. Unit PT Variables

Variable		Level of Variable	N (%)	Men n (%)	Women n (%)
Unit Physical Training	Currently participate in Unit PT	Yes	1,282(86%)	980(89%)	302(77%)
		No	208(14%)	119(11%)	89(23%)
	How would you rate Unit PT	Challenging	158(12%)	115(12%)	43(14%)
		Hard	163(13%)	129(13%)	34(11%)
		Somewhat Hard	420(32%)	311(31%)	109(35%)
		Moderate	448(34%)	351(35%)	97(31%)
		Easy	110(8%)	83(8%)	27(9%)
	Unit PT Program based on?	Traditional Army PT	317(24%)	223(23%)	94(30%)
		Physical Readiness Training (PRT)	688(53%)	543(55%)	145(47%)
		Cross-training	110(8%)	87(9%)	23(7%)
		Extreme Conditioning	29(2%)	22(2%)	7(2%)
		Combination of the above	145(11%)	106(11%)	39(13%)
		Other	9(1%)	8(1%)	1(<1%)
	Total Unit Running Mileage per week	None	228(16%)	132(13%)	96(26%)
		1-4 miles	161(12%)	125(12%)	36(10%)
		5-9 miles	675(48%)	520(50%)	155(43%)
		10-14 miles	233(17%)	183(18%)	50(14%)
		≥ 15 miles	103(7%)	75(7%)	28(8%)
	Unit PT Sprinting Total weekly time Spent	None	217(16%)	127(12%)	90(25%)
		1-45 minutes	658(47%)	502(49%)	156(43%)
		> 45 minutes	525(38%)	406(39%)	119(33%)
	Unit PT Calisthenics Total weekly time Spent	None	208(15%)	126(12%)	82(23%)
		1-45 minutes	468(33%)	351(34%)	117(32%)
		> 45 minutes	724(52%)	558(54%)	166(46%)
	Unit PT Agility Drills Total weekly time Spent	None	521(37%)	360(35%)	161(44%)
		1-45 minutes	508(36%)	388(38%)	120(33%)
		> 45 minutes	371(27%)	287(28%)	84(23%)
	Unit PT Resistance Training Total weekly time Spent	None	470(34%)	318(31%)	152(42%)
		1-45 minutes	484(35%)	365(35%)	119(33%)
		> 45 minutes	446(32%)	352(34%)	94(26%)
	Unit PT Cross-Training Total weekly time Spent	None	222(16%)	140(14%)	82(23%)
		1-45 minutes	493(35%)	384(37%)	109(30%)
		> 45 minutes	685(49%)	511(49%)	174(48%)

Table 3 displays personal physical training variables. The majority of Soldiers participated in personal PT (82%) with most Soldiers stating their goal of personal PT was to lose weight (24%), increase aerobic capacity and gain muscle mass (22%), and maintain current fitness levels (19%). Traditional Army PT was the largest basis for personal PT program (27%). A little less than a third of Soldiers reported running 5–9 miles per week, with about another third reporting no running for personal PT. About half of the Soldiers performed resistance training > 45 minutes per week.

Table 3. Personal Physical Training Variables

Variable		Level of Variable	N (%)	Men n (%)	Women n (%)
Personal Physical Training	Currently participate in Personal PT	Yes	1,214(82%)	907(82%)	308(79%)
		No	276(19%)	193(18%)	83(21%)
	Goal of Personal PT	Lose Weight	293(24%)	190(21%)	103(32%)
		Gain Muscle Mass	225(18%)	186(20%)	39(12%)
		Increase Aerobic Capacity	137(11%)	99(11%)	38(12%)
		Increase Aerobic Capacity and Gain Muscle Mass	276(22%)	222(24%)	54(17%)
		Maintain Current Fitness Levels	232(19%)	164(18%)	68(21%)
		Unit PT is not challenging enough to maintain my fitness levels	98(6%)	59(6%)	19(6%)
	Personal PT Program based on?	Traditional Army PT	334(27%)	248(27%)	86(27%)
		PRT	165(13%)	126(14%)	39(12%)
		Cross-training	234(19%)	172(19%)	62(19%)
		Extreme Conditioning	192(15%)	136(15%)	56(17%)
		Combination of above	128(10%)	90(10%)	38(12%)
		Other	188(15%)	148(16%)	40(12%)
	Total Personal Running Mileage per week	None	435(29%)	313(29%)	122(31%)
		1-4 miles	348(23%)	249(23%)	99(26%)
		5-9 miles	430(29%)	317(29%)	113(29%)
		10-14 miles	128(9%)	100(9%)	28(7%)
		≥ 15 miles	144(10%)	118(11%)	26(7%)
	Personal PT Sprinting total weekly time	None	636(43%)	471(43%)	165(42%)
		1-45 minutes	424(29%)	316(29%)	108(28%)
		> 45 minutes	430(29%)	312(28%)	118(30%)
	Personal PT Calisthenics total weekly time	None	710(48%)	534(49%)	176(46%)
		1-45 minutes	332(23%)	249(23%)	83(22%)
		> 45 minutes	433(29%)	307(28%)	126(33%)
	Personal PT Agility Drills total weekly time	None	907(62%)	666(61%)	241(63%)
		1-45 minutes	273(19%)	200(18%)	73(19%)
		> 45 minutes	287(20%)	219(20%)	68(18%)
	Personal PT Resistance Training total weekly time	None	494(33%)	350(32%)	144(37%)
		1-45 minutes	258(17%)	178(16%)	80(21%)
		> 45 minutes	728(49%)	565(52%)	163(42%)
	Personal PT Cross-Training total weekly time	None	554(37%)	417(38%)	137(35%)
		1-45 minutes	419(28%)	308(28%)	111(29%)
		> 45 minutes	508(34%)	369(34%)	139(36%)
	Personal Aerobic Drills total weekly time*	None	572(39%)	439(40%)	133(34%)
		1-45 minutes	284(19%)	218(20%)	66(17%)
		> 45 minutes	623(42%)	435(40%)	188(49%)

Note: *Personal Aerobic Drills: Does not include running; examples: elliptical machines, rowing machine, cycling, stair stepper)

6.3 Physical Fitness Performance

Physical fitness performance, as measured by the Army Physical Fitness Test (APFT), includes a 2-mile run, push-ups, and sit-ups. Approximately 80% of the brigade that completed the survey had 2-mile run scores, 93% had push-up scores, and 93% had sit-up scores.

Table 4. Survey Results: Average Physical Fitness Test and BMI

Variable	Men		Women	
	n	(Mean \pm SD)	n	(Mean \pm SD)
2 Mile Run (minutes and fraction of a minutes)	874	14.72 \pm 1.46	313	17.03 \pm 1.63
Push-Ups (reps)	1,017	64.4 \pm 12.8	370	41.2 \pm 12.2
Sit-Ups (reps)	1,018	68.4 \pm 11.6	365	68.4 \pm 11.9
Total APFT Score (points)	866	256.7 \pm 30.1	306	260.4 \pm 29.3
BMI (kg/m ²)	1,093	26.4 \pm 4.1	389	23.7 \pm 4.3

6.4 Master Fitness Trainer and Wellness Center

Even though all of the Units have Master Fitness Trainers, most Soldiers were unaware of their Unit having a Master Fitness Trainer (66%). The availability and usage of AWC were also reported with 60% of Soldiers aware of an AWC on their installation and 18% reporting usage of the AWC.

Table 5. Master Fitness Trainer and Wellness Center

Variable	Variable Level	N	(%)
Does your Unit have an assigned Master Fitness Trainer?	Yes	511	34%
	No	380	26%
	Not Sure	597	40%
Is there an Army Wellness Center (AWC) on your installation?	Yes	886	60%
	No	63	4%
	Not Sure	539	36%
Have you been evaluated at the Army Wellness Center?	Yes	161	18%
	No	725	82%

6.5 Injury Data from Medical Records (AFHSC)

Medical records injury information (captured from the DMSS at AFHSC) included overall injuries, overuse injuries, and traumatic injuries experienced by the brigade in the past 12 months (Table 6). Based on the medical records data from AFHSC, 69% of Soldiers had reported an injury over the past 12 months.

Table 6. Injury Incidence for Men and Women as Calculated from Medical Record Data per 1,000 Soldiers per month

Injury Type	Number of Injuries experienced in past 12 months	% Injury	Average Injury Incidence per 1000 Soldier per month
Overall (CII)	1,027	69%	57
Overuse (OII)	840	56%	47
Traumatic (TII)	540	36%	30

Table 7 shows injury incidence was slightly higher in women (77%) compared to men (66%). Battalion 4 had the highest injury incidence (78%) and Battalion 1 had the lowest (65%). The table also shows injury incidence increases as age increases.

Table 7. Overall Injury Incidence from Medical Records

Variable	Variable Level	N Surveyed	N Injured (% Injured)
Total Soldiers		1,490	1,027(69%)
Gender	Men	1,099	727(66%)
	Women	391	300(77%)
Battalion	Battalion 1	153	100(65%)
	Battalion 2	418	296(71%)
	Battalion 3	398	305(77%)
	Battalion 4	427	331(78%)
	Battalion 5	333	234(70%)
Age	17-20 years	146	85(58%)
	21-25 years	430	267(62%)
	26-29 years	289	204(71%)
	≥ 30 years	625	471(75%)

Overall injury visits per month are shown in Figure 1. Soldiers on permanent profile accounted for 43% of all clinic visits. Figure 2 displays the number of medical visits by selected clinics for men and women. Physical therapy had 31% of visits and family practice and primary care clinic visits had 22% of visits.

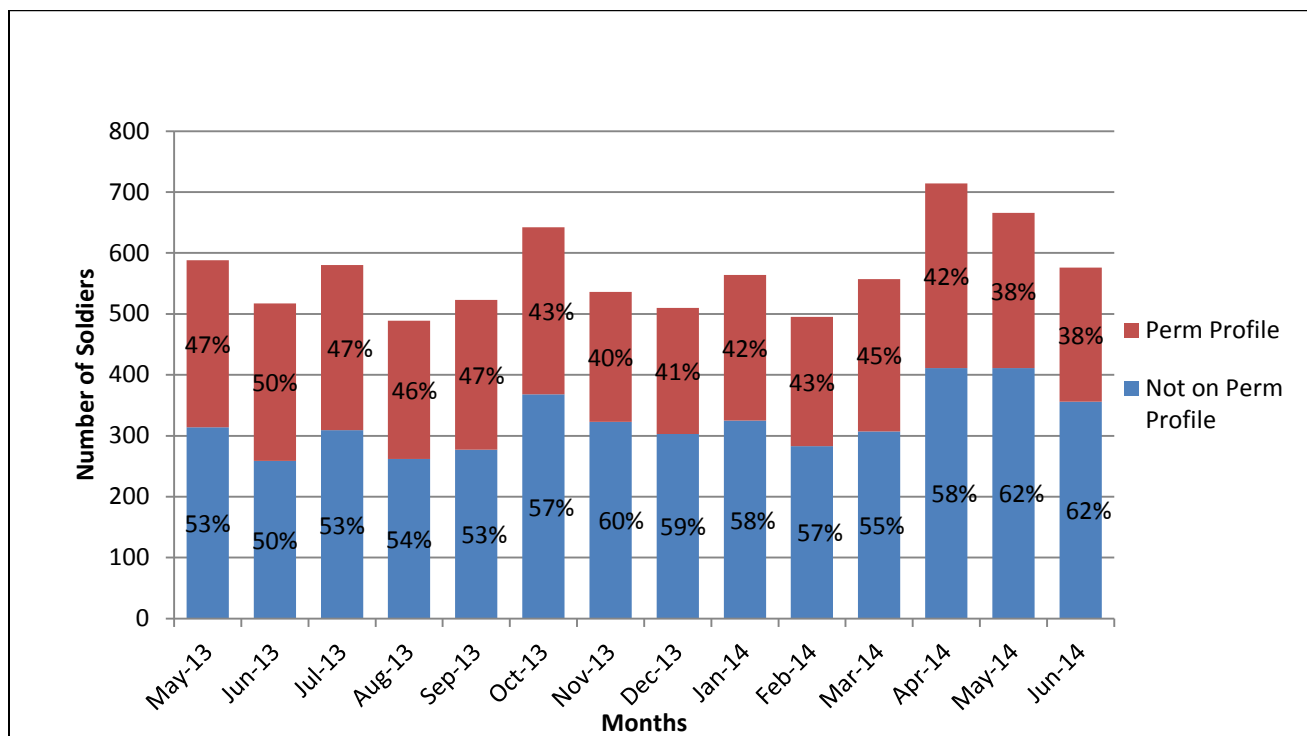


Figure 1. Clinic Visits for Overall Injuries Men and Women (May 2013–June 2014)

Note: Overall injury visits (n=7,957) by month for men and women (n=1,490).

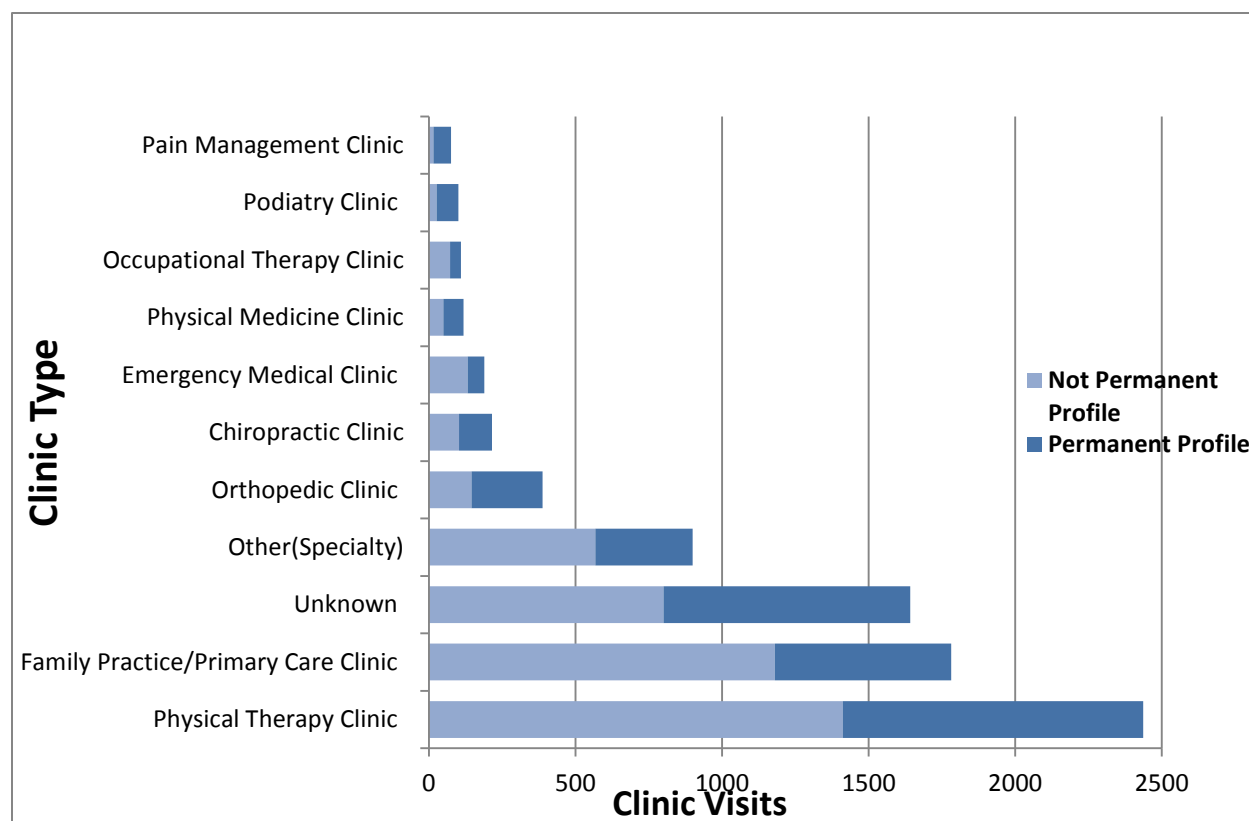


Figure 2. Medical Visits for Overall Injuries for Men and Women Survey Respondents by Selected Medical Clinic (May 2013–June 2014)

Note: (n=1,490 Soldiers; 7,957 Clinic visits)

Table 8 displays the Barrell Injury Matrix classified by body region and the nature of the injury for all acute and traumatic injuries. The Matrix is based on medical data using International Classification of Disease, 9th Revision, Clinical Modification (ICD-9-CM) codes. This is considered the official system of assigning codes to diagnose and procedures associated with hospital/clinic utilization ^[3]. Table 8 shows ICD-9-CM codes in the 800-900's range ^[4].

Results show 1,482 injuries from May 2013 to June 2014 for the entire Chemical BDE with 44% occurring in the lower extremities and 49% classified as strains or sprains. Strain and sprain injuries occurring in the foot/ankle region accounted for 11% of all injuries.

Table 9 displays the Musculoskeletal matrix reference also utilizing the ICD-9-CM codes for only the 700 codes [4].

Results show 7,098 musculoskeletal injury visits occurring between May 2013 and June 2014, for the entire Chemical BDE with 90% of musculoskeletal injuries being inflammation and pain (overuse) and 27% of musculoskeletal injuries occurring in the lower leg/knee region. Combined, 25% of all musculoskeletal injuries were inflammation or pain (overuse) occurring in the knee.

Table 8. The Barrell Injury Diagnosis Matrix, Classification by Body Region and Nature of Injury (Traumatic/Acute - 800 ICD-9 Codes)

			Fracture	Dislocation	Sprains/ Strains	Internal	Open Wound	Amputations	Blood Vessel	Contusion/ Superficial	Crush	Burns	Nerves	Unspecified	System-wide & late effects	Total	Percent	Percent by Body Region
Head and Neck	Traumatic Brain Injury (TBI)	Type 1 TBI	0			6							0			6	0.4	2.4
		Type 2 TBI	1			29										30	2.0	
	Other Head, Face, Neck	Other head					3					0	0	15		18	1.2	7.7
		Face	23	0	0		11					0				34	2.3	
		Eye					6			32		1	0			39	2.6	
	Head, Face, Neck Unspec.							0	16	1	0	0	6		23	1.6		
Spine and Back	Spinal Cord (SCI)	Cervical SCI	1			0										1	0.1	0.1
		Thoracic/Dorsal SCI	1			0										1	0.1	
	Vertebral Column (VCI)	Cervical VCI	8	0	12											20	1.3	5.7
		Thoracic/Dorsal VCI	14	0	5											19	1.3	
		Lumbar VCI	9	0	33											42	2.8	
		Sacrum Coccyx VCI	2	1	1											4	0.3	
Torso	Torso	Chest (thorax)	10	0	10	4	0		0	3	0	0	0			27	1.8	6.1
		Abdomen				1	0		0	0		0	0			1	0.1	
		Pelvis, Urogenital	2	0	29	0	1		0	0	0	0	0			32	2.2	
		Trunk	0				0			7	0	0	0	12		19	1.3	
		Back, Buttock			8		2			1	0	0				11	0.7	
Extremities	Upper	Shoulder, Upper Arm	22	7	93		0	0		6	0	0		5		133	9.0	21.3
		Forearm, Elbow	4	0	3		0	0		7	0	1				15	1.0	
		Wrist, Hand, Fingers	59	2	28		22	0		19	4	8		5		147	9.9	
		Other & Unspec.	0				2	0	0	8	0	1	6	4		21	1.4	
	Lower	Hip	4	0	82					4	0					90	6.1	44.4
		Upper leg, Thigh	6					0		2	0	0				8	0.5	
		Knee	0	27	50					9	0	0				86	5.8	
		Lower leg, Ankle	26	0	167			0		2	1	0				196	13.2	
		Foot, toes	19	0	39		3	0		20	2	0				83	5.6	
		Other & Unspec.	0		119		5	0	0	10	0	0		61		195	13.2	
	Unspec. Site	3	0	49	0	5		0	20	0	0	0	3		80	5.4		
System-wide/late effects														101	101	6.8	6.8	
Total		214	37	728	40	60	0	0	166	8	11	6	111	101	1,482			
Percent		14.4	2.5	49.1	2.7	4.0	0	0	11.2	0.5	0.7	0.4	7.5	6.8		100.0	100.0	
Note: *Body regions excluded from chart if there were no injuries include: Type 3 TBI, Neck, Lumbar SCI, Sacrum Coccyx SCI, Spine Back Unspecified SCI, Spine Back Unspecified VCI																		

Note: *Body regions excluded from chart if there were no injuries include: Type 3 TBI, Neck, Lumbar SCI, Sacrum Coccyx SCI, Spine Back Unspecified SCI, Spine Back Unspecified VCI

Table 9. Musculoskeletal Matrix (Overuse/Chronic - 710-739 ICD-9 codes)

			Inflammation and Pain (Overuse)	Joint Derangement	Joint Derangement with Neurological	Stress Fracture	Sprains/Strains/Rupture	Dislocation	Total	Percent	Percent by Body Region
Spine and Back	Vertebral Column (VCI)	Cervical VCI	228	24	24				276	3.9	34.5
		Thoracic/Dorsal VCI		8	113				121	1.7	
		Lumbar VCI	1,561	136	16				1,713	24.1	
		Sacrum Coccyx VCI	75						75	1.1	
		Spine, Back Unspec. VCI	262	3	0	2			267	3.8	
Extremities	Upper	Shoulder	1,033	41			0	3	1,077	15.2	18.5
		Upper Arm, Elbow	79	0		0		0	79	1.1	
		Forearm, Wrist	122	2		0		0	124	1.7	
		Hand	32	2			1	0	35	0.5	
	Lower	Pelvis, Hip, Thigh	455	7		43	0	0	505	7.1	44.6
		Lower leg, Knee	1,794	61		12	78	0	1,945	27.4	
		Ankle, Foot	661	47		8	0	0	716	10.1	
Unclass. by Site	Other, Unspecified	Other specified/Multiple	11	0		0	0	0	11	0.2	2.3
		Unspecified Site	118	1	12	23	0	0	154	2.2	
		Total	6,431	332	165	88	79	3	7,098		
		Percent	90.6	4.7	2.3	1.2	1.1	0.0		100.0	100.0

Table 10 displays injury visits for three additional populations compared to the Chemical BDE. All active duty Army had 213.4 injury visits per 1,000 Soldier months in 2013, while this Chemical BDE experienced 423.7 injury visits per 1,000 Soldier months.

Table 10. Injury visits for Men and Women as Calculated from Medical Record Data per 1,000 Soldiers per month, 2009–2014

Brigade	Total N	Number of Injury visits experienced (Time period)	Average Injury Visits per 1000 Soldier per month	Average Injury Visits per 1000 Soldier per month < 30 years old	Average Injury Visits per 1000 Soldier per month ≥ 30 years old
Chemical Brigade	1,837	10,898 (14 months)	423.7	369.1	497.5
2-4 ID	5,483	10,414 (7 months)	271.3	229.1	404.1
25 th ID	4,031	7,818 (6 months)	323.2	267.8	483.0
Active Duty Army	530,148	1,357,752 (12 months)	213.4		
Note: Injury incidence by age groups could not be calculated for overall Active Duty Army					

6.6 Injury Data from Surveys

Self-reported injuries were obtained during the last 12 months from survey administration date and 48% of Soldiers reported an injury. For each variable the most common type of injury occurred in the knee (23%), were strains/sprains (42%), was associated with running (35%), and was caused by repetitive/overuse activities (44%) (Table 11).

Table 11. Survey Results: Self-Reported Injury Descriptives for Men and Women

Variable	Injury Descriptive	Variable Level N(%)	Men n(%)	Women n(%)
Body Part Injured	Knee	164(23%)	125(24%)	39(21%)
	Lower Back	129(18%)	100(19%)	29(16%)
	Ankle	83(12%)	59(11%)	24(13%)
	Shoulders	70(10%)	59(11%)	11(6%)
	Foot	56(8%)	41(8%)	15(8%)
	Lower leg (Calf/shin)	40(6%)	30(6%)	10(5%)
	Hip	39(6%)	17(3%)	22(12%)
	Upper leg (thigh/hamstring)	26(4%)	20(4%)	6(3%)
	Wrist/hand	25(4%)	17(3%)	8(4%)
	Upper Back	13(2%)	9(1%)	4(2%)
	Abdomen	10(1%)	7(1%)	3(2%)
	Other ²	52(7%)	39(7%)	13(8%)
Injury Type	Sprain/Strain	299(42%)	210(40%)	89(48%)
	Tear (muscle/ligaments)	116(16%)	97(19%)	19(10%)
	Fracture/Break	55(8%)	41(8%)	14(8%)

Table 11. Survey Results: Self-Reported Injury Descriptives for Men and Women (continued)

		Variable Level	Men	Women
Variable	Injury Descriptive	N(%)	n(%)	n(%)
Injury Type	Spinal Injury (bulging or slipped disk)	49(7%)	41(8%)	8(4%)
	Nerve Injury	24(3%)	16(3%)	8(4%)
	Bruise/Contusion	22(3%)	14(3%)	8(4%)
	Fasciitis	20(3%)	15(3%)	5(3%)
	Unspecified Pain/swelling	18(3%)	12(2%)	6(3%)
	Dislocation	17(2%)	11(2%)	6(3%)
	Blunt Force Trauma	16(2%)	13(3%)	3(2%)
	Bursitis/Tendonitis/arthritis	13(2%)	12(2%)	1(1%)
	Heat/Cold Injury	10(1%)	7(1%)	3(2%)
	Other/unknown ³	48(7%)	34(7%)	14(8%)
Activity Associated with Injury	Running	246(35%)	167(32%)	79(43%)
	Lifting or moving heavy objects	109(15%)	86(16%)	23(13%)
	Physical Training	107(15%)	87(17%)	20(11%)
	Sports/Recreation	56(8%)	52(10%)	4(2%)
	Marching	40(6%)	27(5%)	13(7%)
	Walking or hiking	27(4%)	17(3%)	10(5%)
	Combatives/Training	27(4%)	19(4%)	8(4%)
	Stepping/Climbing	21(3%)	12(2%)	9(5%)
	Riding/driving in motor vehicle	13(2%)	10(2%)	3(2%)
	Other/Unknown/Multiple factors	61(9%)	46(9%)	15(7%)
Cause of Injury	Overuse/Repetitive Activity	308(44%)	218(42%)	90(49%)
	Single twisting/over-extension	89(13%)	66(13%)	23(13%)
	Single overexertion effort- moved too fast, too much weight	75(11%)	65(12%)	10(5%)
	Falling- Level surface	53(8%)	39(7%)	14(8%)
	Contact (hit by/against) a raised object/surface	44(6%)	34(7%)	10(5%)
	Direct contact by a person	24(3%)	18(3%)	6(3%)
	Falling- Raised surface	23(3%)	16(3%)	7(4%)
	Specific military task (e.g., parachuting)	15(2%)	10(2%)	5(3%)
	Falling from motor vehicle	14(2%)	14(3%)	2(1%)
	Other ¹	61(9%)	45(8%)	16(4%)
<p>Notes:</p> <p>*Other also includes categories with <10 : Gunshot, missile, or blast; Repairing or maintaining equipment; Rough-housing/fighting</p> <p>¹Other also includes categories with <10: unknown, Cut/puncture, Impact from a blast, Heat injury, cold injury, or insect bit.</p> <p>²Other also includes categories with <10: Other, Heat/Cold injury-not specific body part, spine, chest/ribs, elbow, lower arm, upper arm, head, or neck</p> <p>Other also includes categories with <10: Abrasion, Blister, Cut/laceration</p>				

There were 521 (35%) Soldiers placed on temporary profile and encountered a total of 29,739 LDDs for the most severe injury reported in the past 12 months.

The top three types of injuries with the most LDDs in the past 12 months were strains/sprains (22%), tears (muscle/ligament) (28%), and broken/fractured bones (13%) (Table 12).

Table 12. Survey Results: Number of Limited Duty Days by Type for First Two Injuries experienced in Last 12 Months for Men and Women

Variable	N Injuries	N Limited Duty*	N Limited Duty Days	Avg LLDs per Soldier (12 months)	Avg LDDs per month
Sprain/Strain	299(42%)	192	6442	33.6±36.2	536.8
Tear (muscle/ligament)	116(15%)	95	8356	88.0±100.2	696.3
Broken/Fractured bone	54(7%)	49	3849	78.6±101.2	320.8
Spinal injury (bulging/slipped disc)	49(7%)	33	3039	92.1±94.5	253.3
Fasciitis (e.g., plantar fasciitis)	20(2%)	15	1540	102.7± 92.3	128.3
Nerve Injury	24(3%)	18	1220	67.8±85.4	101.7
Unspecified Pain/swelling	18(2%)	15	655	43.7±52.4	54.6
Tendonitis, Bursitis, or Arthritis	11(2%)	11	789	71.7±103.8	65.8
Bruise/Contusion	22(3%)	17	474	27.9±21.2	39.5
Dislocation	15(2%)	11	356	39.2±29.7	29.7
Blunt Force Trauma	16(2%)	9	409	45.4±45.3	34.1
Heat or Cold	10(1%)	3	138	46.0±43.5	11.5
Cut/Laceration	6(1%)	4	93	23.3±24.9	7.8
Scrap/Abrasion	1(<1%)	1	7	7±0	0.6
Blister	1(<1%)	--	--	--	--
Burn	--	--	--	--	--
Concussion	--	--	--	--	--
Other	40(6%)	31	2,297	74.1±87.0	191.4
Total	707(100%)	504	29,664	59.0±76.7	2,478.3

Note: *Includes only the number of Soldiers that reported the number of limited duty days.

Lower extremity injuries (Leg/Knee/Shin/Ankle/Foot) accounted for approximately 56% of all the LDDs with 16,672 LDDs (Table 13). The back region (upper/lower/spine) had 21% of all the LDDs with 6,143 LDDs (Table 13).

Table 13. Survey Results: Limited Duty Days by Injured Body Area for Men and Women

Variable	N Injuries	N Limited Duty*	N Limited Duty Days	Avg LLDs per Soldiers (12 months)	Avg LDDs per month
Leg/Knee/shin	230(33%)	175	9,923	56.7±65.0	826.9
Back (upper/lower, spine)	149(21%)	103	6,143	59.6±77.9	511.9
Ankle/Foot	139(20%)	95	6,749	71.0±114.5	562.4
Shoulder/Arm/Hand/Fingers	107(15%)	76	4,117	54.2±56.8	343.1
Hip/Pelvis	39(6%)	28	1,771	63.3±56.6	147.6
Torso (Chest/Abdomen)	17(2%)	12	391	32.6±22.7	32.8
Head/Neck	16(2%)	8	312	39.0±28.1	26.0
Unknown/Undefined	10(1%)	7	333	47.6±27.11	27.8
Total	707(100%)	504	29,739	59.0±76.7	2,478.3

Note: *Includes only the number of Soldiers that reported the number of limited duty days.

6.7 Permanent Profile

The Chemical BDE had 22% of Soldiers (n=328) reporting a permanent profile during the last 12 months, with 20% being permanent profiles level 2, and 4% being permanent profile level 3. Permanent profiles were spread evenly between genders and battalions, with Battalion 4 slightly higher (25%) and Battalion 5 slightly lower (17%). The average amount of time spent on permanent profile status was 3.2 years (standard deviation \pm 3.1 years). Permanent profiles increased with age and were highest among Soldiers 30 years of age or older (37%). Over 60% of Soldiers on permanent profile stated their permanent profile had none to very little impact on PT or job-related requirements (Table 14).

Table 14. Permanent Profile Descriptives

Variable	Variable Level	N	Permanent Profile (%)
Total Soldiers		1,490	22%
Gender	Male	1,099	22%
	Female	391	22%
Battalion	Battalion 1	137	22%
	Battalion 2	346	22%
	Battalion 3	354	22%
	Battalion 4	359	25%
	Battalion 5	294	17%
Age	\leq 20 years	146	3%
	21-25 years	430	7%
	26-29 years	289	22%
	\geq 30 years	625	37%
Does your Permanent Profile Limit physical training or your job duties?	No	86	27%
	Little Impact	109	34%
	Some Impact	63	19%
	Significant impact	29	9%
	Unable to Perform Duties as assigned	38	12%

6.8 Injury Risk Factors

Univariate analysis was performed to evaluate risk factors associated with personal characteristics, unit PT, personal PT, and physical performance separately for men and women. Soldiers excluded from the analyses were those who did not participate in unit PT (for unit PT analysis) or personal PT (for personal PT analysis) and were on permanent profile.

Table 15 displays injury risk factors for unit PT among male Soldiers (n=1,026). Male Soldiers with a higher risk of injury were aged 26 or older, obese ($\text{BMI} \geq 30 \text{ kg/m}^2$), ex-smokers, performed fewer sit-ups, had poor performance on the APFT 2-mile run, and did not perform long distance running with their unit. Male Soldiers with a lower risk of injury were lower ranking (E1–E2), performed unit agility drills < 45 minutes per week, and performed any amount of unit calisthenics (1–45 minutes and > 45 minutes).

Table 15. Injury Risk Factors for Male Soldiers Associated with Personal Characteristics, PT, and Fitness, Unadjusted Unit PT and APFT Fitness

Variable	Variable Level	N	AFHSC Injuries (%)	Unadjusted Risk Ratio (95% CI)	p-value
Age	≤20	80	39(49%)	1.00	
	21-25	287	159(55%)	1.14(0.89-1.46)	0.29
	26-29	193	127(66%)	1.35(1.06-1.73)	<0.01
	≥ 30	473	337(71%)	1.46(1.16-1.84)	<0.01
BMI(kg/m ²)	< 18.5	33	16(49%)	0.80(0.55-1.14)	0.16
	18.5-24.9	315	192(61%)	1.00	
	25.0-29.9	501	323(65%)	1.06(0.95-1.18)	0.31
	≥ 30.0	177	127(72%)	1.18(1.04-1.34)	0.02
Rank	E1-E2	50	17(34%)	0.53(0.36-0.78)	<0.01
	E3-E4	393	253(64%)	1.00	
	E5-E6	305	204(67%)	1.04(0.93-1.16)	0.50
	E7-E9	118	83(70%)	1.09(0.95-1.26)	0.23
	O1-O3	122	75(62%)	0.95(0.81-1.12)	0.56
	O4-O7	36	25(69%)	1.08(0.86-1.36)	0.54
	W1-W3	9	5(56%)	0.86(0.48-1.56)	0.59
Current Cigarette Use	Nonsmoker	669	411(61%)	1.00	
	Ex-smoker	145	104(72%)	1.17(1.04-1.31)	0.02
	Smoker	219	147(67%)	1.09(0.98-1.22)	0.13
APFT 2 mile run time (fraction of minutes)	≥15.91 (Q4)	209	146(70%)	1.29(1.11-1.49)	<0.01
	14.94-15.90 (Q3)	215	134(62%)	1.15(0.98-1.35)	0.09
	13.93-14.93 (Q2)	218	133(61%)	1.12(0.95-1.32)	0.16
	≤13.92 (Q1)	217	118(54%)	1.00	
APFT Pushups (repetitions completed in 2 minutes)	≤55 (Q4)	253	168(66%)	1.09(0.95-1.24)	0.21
	56-65 (Q3)	257	164(64%)	1.05(0.91-1.20)	0.52
	66-74 (Q2)	222	141(64%)	1.04(0.90-1.20)	0.58
	≥75 (Q1)	249	152(61%)	1.00	
APFT Sit-ups (repetitions completed in 2 minutes)	≤60 (Q4)	268	180(67%)	1.19(1.03-1.36)	0.01
	61-68 (Q3)	224	142(63%)	1.11(0.97-1.30)	0.14
	69-77 (Q2)	234	156 (67%)	1.18(1.02-1.36)	0.02
	≥78 (Q1)	247	140(57%)	1.00	
Total Unit Distance Running Mileage	1-4 miles	125	72(58%)	1.00	
	None	130	99(76%)	1.32(1.11-1.58)	<0.01
	5-9 miles	520	325(63%)	1.09(0.92-1.28)	0.31
	≥10 miles	258	166(64%)	1.12(0.94-1.33)	0.20
Unit Sprinting training total time	None	125	92(74%)	1.00	
	1-45 minutes	502	320(64%)	0.87(0.77-0.98)	0.04
	> 46 minutes	406	250(62%)	0.84(0.73-0.95)	0.01
Unit Calisthenics training total time	None	124	98(79%)	1.00	
	1-45 minutes	351	217(62%)	0.78(0.69-0.88)	<0.01
	> 45 minutes	558	347(62%)	0.79(0.70-0.88)	<0.01
Unit Agility training total time	None	358	250(70%)	1.00	
	1-45 minutes	388	228(59%)	0.84(0.76-0.94)	<0.01
	> 45 minutes	287	184(64%)	0.92 (0.82-1.03)	0.12

Table 15. Injury Risk Factors for Male Soldiers Associated with Personal Characteristics, PT, and Fitness, Unadjusted Unit PT and APFT Fitness (continued)

Variable	Variable Level	N	AFHSC Injuries (%)	Unadjusted Risk Ratio (95% CI)	p-value
Unit Resistance training total time	None	316	210(67%)	1.00	
	1-45 minutes	365	223(61%)	0.92(0.82-1.03)	0.15
	> 45 minutes	352	229(65%)	0.98(0.88-1.09)	0.70
Unit Cross-training total time	None	138	97(70%)	1.00	
	1-45 minutes	384	236(62%)	0.87(0.76-1.00)	0.06
	> 45 minutes	511	329(64%)	0.92(0.81-1.04)	0.20
Note: *Injury data was retrieved from AFHSC and data does not include those that were on permanent profile and did not participate in Unit PT.					

Table 16 displays unadjusted injury risk factors for unit PT among female Soldiers (n=345). Female Soldiers with a higher risk of injury were smokers and performed the fewest sit-ups.

Table 16. Injury Risk Factors for Female Soldiers Associated with Personal Characteristics, Physical Fitness and MOS, Unadjusted UNIT PT and APFT Fitness

Variable	Variable Level	N	AFHSC Injuries (%)	Unadjusted Risk Ratio (95% CI)	p-value
Age	≤20	64	44(69%)	1.00	
	21-25	132	97(74%)	1.07(0.88-1.30)	0.49
	26-29	79	61(77%)	1.12(0.92-1.38)	0.26
	≥ 30	91	73(80%)	1.17(0.96-1.42)	0.10
BMI(kg/m ²)	< 18.5	31	23(74%)	1.03(0.82-1.29)	0.79
	18.5-24.9	192	138(72%)	1.00	
	25.0-29.9	124	97(78%)	1.09(0.96-1.24)	0.21
	≥ 30.0	13	12(92%)	1.28(1.07-1.54)	0.11
Rank	Enlisted	288	222(77%)	1.00	
	Officers	78	53(68%)	0.88(0.75-1.04)	0.10
Current Cigarette Use	Nonsmoker	277	198(72%)	1.00	
	Ex-smoker	27	22(82%)	1.14(0.94-1.39)	0.27
	Smoker	62	55(89%)	1.24(1.11-1.39)	<0.01
APFT 2 mile run time (minutes)	≥18.34 (Q4)	74	59(80%)	1.17(0.97-1.42)	0.10
	17.28-18.33 (Q3)	78	54(69%)	1.02(0.82-1.26)	0.86
	16.01-17.27 (Q2)	71	50(70%)	1.04(0.84-1.28)	0.74
	≤16.00 (Q1)	78	53(68%)	1.00	
APFT Pushups (repetitions completed in 2 minutes)	≤33 (Q4)	88	70(80%)	1.00	
	34-42 (Q3)	101	75(74%)	0.93(0.80-1.09)	0.39
	43-50 (Q2)	101	74(73%)	0.92(0.79-1.08)	0.31
	≥51 (Q1)	55	38(69%)	0.87(0.71-1.07)	0.16

Table 16. Injury Risk Factors for Female Soldiers Associated with Personal Characteristics, Physical Fitness and MOS, Unadjusted Unit PT and APFT Fitness (continued)

Variable	Variable Level	N	AFHSC Injuries (%)	Unadjusted Risk Ratio (95% CI)	p-value
APFT Sit-ups (repetitions completed in 2 minutes)	≤60 (Q4)	103	87(85%)	1.00	
	61-68 (Q3)	71	51(72%)	0.85(0.72-1.01)	0.04
	69-77 (Q2)	96	69(72%)	0.85(0.73-0.99)	0.03
	≥78 (Q1)	75	51(68%)	0.81(0.67-0.96)	<0.01
Total Unit Distance Running Mileage	1-4 miles	36	28(78%)	0.96(0.78-1.17)	0.66
	None	96	78(81%)	1.00	
	5-9 miles	155	110(71%)	0.91(0.75-1.12)	0.41
	≥10 miles	78	59(76%)	0.97(0.78-1.21)	0.80
Unit Sprinting training total time	None	90	73(81%)	1.00	
	1-45 minutes	156	116(74%)	0.92(0.80-1.05)	0.23
	> 46 minutes	119	86(72%)	0.89(0.77-1.04)	0.14
Unit Calisthenics training total time	None	82	66(81%)	1.00	
	1-45 minutes	117	87(74%)	0.92(0.79-1.07)	0.31
	> 45 minutes	166	122(74%)	0.91(0.79-1.05)	0.23
Unit Agility training total time	None	161	124(77%)	1.00	
	1-45 minutes	120	88(73%)	0.95(0.83-1.09)	0.48
	> 45 minutes	84	63(75%)	0.97(0.84-1.13)	0.72
Unit Resistance training total time	None	152	119(78%)	1.00	
	1-45 minutes	119	85(71%)	0.91(0.79-1.05)	0.19
	> 45 minutes	94	71(76%)	0.96(0.84-1.11)	0.62
Unit Cross-training total time	None	82	66(81%)	1.00	
	≤ 45 minutes	109	84(77%)	0.96(0.83-1.11)	0.57
	> 45 minutes	174	125(72%)	0.89(0.77-1.03)	0.14

*Injury data was retrieved from AFHSC and data does not include those that were on permanent profile and could not participate in Unit PT.

Table 17 displays unadjusted injury risk factors for personal PT among male Soldiers. Male Soldiers who were aged 26 or older, obese (BMI ≥ 30 kg/m²), cigarette smokers, ex-smokers, and distance running (≥ 5 miles per week) had an increased risk of injury. Male Soldiers participating in personal sprinting, agility (1-45 minutes) and calisthenics (> 45 minutes) had a decreased risk of injury.

Table 17. Injury Risk Factors for Male Soldiers Associated with Personal Characteristics, PT and Fitness, Unadjusted Personal

Variable	Variable Level	N	AFHSC Injuries (%)	Unadjusted Risk Ratio (95% CI)	p-value
Age	≤20	82	41(50%)	1.00	
	21-25	290	162(56%)	1.12(0.88-1.42)	0.35
	26-29	198	133(67%)	1.34(1.06-1.70)	<0.01
	≥30	489	356(73%)	1.46(1.17-1.82)	<0.01
BMI (kg/m ²)	< 18.5	33	17(52%)	0.84(0.60-1.18)	0.27
	18.5-24.9	319	196(61%)	1.00	
	25.0-29.9	510	334 (66%)	1.07(0.96-1.19)	0.24
	≥30.0	190	141(74%)	1.21(1.07-1.36)	<0.01
Rank	E1-E2	50	17(34%)	0.52(0.35-0.77)	<0.01
	E3-E4	402	263(65%)	1.00	
	E5-E6	316	217(69%)	1.05(0.95-1.16)	0.36
	E7-E9	118	84(71%)	1.09(0.95-1.25)	0.24
	O1-O3	123	76(62%)	0.94(0.81-1.10)	0.46
	O4-O7	39	28(72%)	1.10(0.89-1.35)	0.42
	W1-W3	11	7(64%)	0.97(0.62-1.53)	0.90
Current Cigarette Use	Nonsmoker	684	429(63%)	1.00	
	Ex-smoker	147	106(72%)	1.15(1.02-1.29)	0.03
	Smoker	228	157(69%)	1.10(0.99-1.22)	0.09
Total Personal Distance Running Mileage	None	273	195(71%)	1.00	
	1-4 miles	249	173(70%)	0.97(0.87-1.09)	0.63
	5-9 miles	317	192(61%)	0.85(0.75-0.95)	<0.01
	≥10 miles	218	130(60%)	0.83(0.73-0.95)	<0.01
Personal Sprinting training total time	None	431	303(70%)	1.00	
	1-45 minutes	316	239(61%)	0.87(0.78-0.97)	0.01
	> 45 minutes	312	70(63%)	0.89(0.80-0.99)	0.03
Personal Calisthenics training total time	None	494	344(70%)	1.00	
	1-45 minutes	249	157(63%)	0.91(0.81-1.01)	0.07
	> 45 minutes	307	184(60%)	0.86(0.77-0.96)	<0.01
Personal Agility training total time	None	626	423(68%)	1.00	
	1-45 minutes	200	117(60%)	0.87(0.76-0.98)	0.02
	> 45 minutes	219	139(64%)	0.94(0.84-1.05)	0.27
Personal Resistance training total time	None	310	200(65%)	1.00	
	1-45 minutes	178	116(65%)	1.01(0.88-1.16)	0.88
	> 45 minutes	565	371(66%)	1.02(0.92-1.13)	0.73
Personal Cross-training total time	None	377	256(68%)	1.00	
	1-45 minutes	308	193(63%)	0.92(0.83-1.03)	0.15
	> 45 minutes	369	239(65%)	0.95(0.86-1.06)	0.36
Personal Aerobic Endurance training (not running)	None	399	254(64%)	1.00	
	1-45 minutes	218	146(67%)	1.05(0.93-1.19)	0.41
	> 45 minutes	435	287(66%)	1.04(0.94-1.15)	0.48
Note: *Injury data was retrieved from AFHSC and data does not include those that were on permanent profile that did not participate in Personal PT.					

Table 18 displays injury risk factors for personal PT among female Soldiers. Female Soldiers who were aged 30 or older, cigarette smokers, and performed > 45 minutes of aerobic endurance

training had an increased risk of injury. Female Soldiers participating in 1-45 minutes of personal sprinting and 1-45 minutes of aerobic endurance training had a decreased risk of injury.

Table 18. Injury Risk Factors for Female Soldiers Associated with Personal Characteristics, Physical Fitness and MOS, Unadjusted Personal PT (Excluding those on permanent profile, based on medical record data (AFHSC))

Variable	Variable Level	N	Injuries (%)	Unadjusted Risk Ratio (95% CI)	p-value
Age	≤20	64	44(69%)	1.00	
	21-25	133	98(74%)	1.07(0.88-1.30)	0.47
	26-29	79	61(77%)	1.12(0.92-1.40)	0.26
	≥30	91	74(81%)	1.18(0.98-1.43)	0.07
BMI (kg/m²)	< 18.5	194	141(73%)	1.00(0.78-1.27)	0.98
	18.5-24.9	29	31(72%)	1.00	
	25.0-29.9	125	98(78%)	1.08(0.95-1.22)	0.25
	≥30.0	13	12(92%)	1.27(1.06-1.52)	0.12
Rank	Enlisted	291	225(77%)	1.00	
	Officers	76	52(68%)	0.88(0.75-1.04)	0.11
Current Cigarette Use	Nonsmoker	274	196(72%)	1.00	
	Ex-smoker	29	24(83%)	1.16(0.96-1.39)	0.20
	Smoker	64	57(89%)	1.25(1.11-1.40)	<0.01
Total Personal Distance Running Mileage	None	98	77(79%)	1.00	
	≤ 4 miles	99	70(71%)	0.90(0.76-1.06)	0.21
	5-9 miles	113	85(75%)	0.96(0.83-1.11)	0.57
	≥10 miles	54	42(78%)	0.99(0.83-1.18)	0.91
Personal Sprinting training total time	None	141	109(77%)	1.00	
	1-45 minutes	108	72(67%)	0.86(0.73-1.01)	0.06
	> 45 minutes	118	96(81%)	1.05(0.93-1.19)	0.42
Personal Calisthenics training total time	None	152	115(76%)	1.00	
	1-45 minutes	83	59(71%)	0.94(0.80-1.11)	0.45
	> 45 minutes	126	99(79%)	1.04(0.91-1.18)	0.57
Personal Agility training total time	None	217	160(74%)	1.00	
	1-45 minutes	73	54(74%)	1.00(0.86-1.17)	0.97
	> 45 minutes	68	55(81%)	1.10(0.95-1.26)	0.23
Personal Resistance training total time	None	120	90(75%)	1.00	
	1-45 minutes	80	55(69%)	0.92(0.77-1.10)	0.33
	> 45 minutes	163	128(79%)	1.05(0.92-1.19)	0.49
Personal Cross-training total time	None	113	86(76%)	1.00	
	1-45 minutes	111	77(69%)	0.91(0.78-1.07)	0.26
	> 45 minutes	139	111(80%)	1.05(0.92-1.20)	0.47
Personal Aerobic Endurance training (not running)	None	110	80(73%)	1.00	
	1-45 minutes	66	38(58%)	0.79(0.62-1.00)	0.04
	> 45 minutes	188	157(84%)	1.14(1.01-1.31)	0.03

Multivariate statistical analyses were conducted to independently evaluate risk factors associated with unit and personal PT activities for male Soldiers and female Soldiers, excluding those on permanent profile and also not participating in unit or personal PT. A multivariate analysis was not performed using the unit PT model for women due to so few variables showing significance in the unadjusted unit PT

model. APFT was not entered into the model due to a higher percentage of Soldiers not performing part or all of the APFT due to permanent profiles; this would have significantly reduced the sample representation and size. A separate model was run with APFT and produced slightly different results, but there was also a loss in sample size due to Soldiers not performing APFT; these multivariate tables are located in the appendix (Table B-11).

Table 19 shows the effects of unit PT activities on injury risk among male Soldiers. The following variables were chosen to enter into the model based on a p-value < 0.10: age, BMI, smoking status, unit running total mileage, unit calisthenics, and unit agility. A forced multivariate model was used to calculate odds ratios. Analysis indicated that male Soldiers who were older than 26, Soldiers who ran ≥ 10 miles per week with their unit, and smokers were at significantly higher risk for injury. Analysis also indicated Soldiers who spent 1-45 minutes per week performing agility drills with their unit and Soldiers participating in any amount of calisthenics per week during personal PT had a significantly decreased risk for injury.

Table 19. Multivariate Logistic Regression: Injury Risk Factors for Unit PT for Male Soldiers

Variable	Variable Level	N	Odds Ratio (95% CI)	p-value
Age	≤ 20	79	1.00	
	21-25	285	1.30(0.77-2.18)	0.33
	26-29	193	2.10(1.21-3.65)	0.01
	≥ 30	469	2.71(1.62-4.56)	<0.01
Current Cigarette Use	Nonsmoker	663	1.00	
	Ex-smoker	144	1.51(1.00-2.28)	0.05
	Smoker	219	1.34(0.95-1.87)	0.09
Total Unit Distance Running Mileage	None	129	1.00	
	1-4 miles	123	0.54(0.26-1.10)	0.09
	5-9 miles	518	0.72(0.37-1.40)	0.34
	≥ 10 miles	256	0.85(0.43-1.70)	0.65
Unit PT Calisthenics total weekly time spent	None	122	1.00	
	1-45 minutes	349	0.42(0.22-0.80)	0.01
	> 45 minutes	555	0.37(0.20-0.69)	<0.01
Unit PT Agility Training total weekly time spent	None	355	1.00	
	1-45 minutes	386	0.63(0.44-0.89)	0.01
	> 45 minutes	285	0.83(0.56-1.23)	0.36
Note: Variables entered into analysis: Age, BMI, smoking status, unit running total mileage, unit sprinting, unit calisthenics, unit agility, and unit cross training.				

Table 20 shows the effects of personal PT activities on injury risk among male Soldiers. The following variables were chosen to enter into the model based on a p-value < 0.10: age, BMI, smoking status, personal running total mileage per week, personal calisthenics, personal sprinting, and personal agility. A forced multivariate model was used to calculate odds ratios. Analysis indicated that Soldiers who were older than 26 were at significantly higher risk for injury. Analysis also indicated Soldiers who performed distance running of 5 or more miles per week and calisthenics > 45 minutes per week during personal training had significantly decreased risk of injury.

Table 20. Multivariate Logistic Regression: Injury Risk Factors for Personal PT for Male Soldiers

Variable	Variable Level	N	Odds Ratio (95% CI)	p-value
Age	≤20	80	1.00	
	21-25	280	1.24(0.74-2.06)	0.42
	26-29	192	1.96(1.14-3.39)	0.02
	≥30	478	2.69(1.63-4.46)	<0.01
Total Personal Distance Running Mileage	None	270	1.00	
	1-4 miles	239	1.02(0.63-1.65)	0.93
	5-9 miles	307	0.67(0.43-1.06)	0.08
	≥10 miles	214	0.65(0.40-1.05)	0.08
Personal Calisthenics training total time	None	487	1.00	
	1-45 minutes	240	0.86(0.57-1.30)	0.47
	> 45 minutes	303	0.63(0.42-0.95)	0.03
Note: Variables entered into analysis: age, BMI, smoking status, personal running total mileage, personal sprinting, personal calisthenics, and personal agility.				

Table 21 shows the effects of personal PT activities on injury risk among female Soldiers. The following variables were chosen to enter into the model based on a p-value < 0.10: age, smoking status, personal sprinting, and personal aerobic endurance training (not running). A forced multivariate model was used to calculate odds ratios. Analysis indicated that female Soldiers who were smokers had significantly higher injury risk and personal aerobic endurance training showed marginally elevated injury risk.

Table 21. Multivariate Logistic Regression: Injury Risk Factors for Personal PT for Female Soldiers

Variable	Variable Level	N	Odds Ratio (95% CI)	p-value
Current Cigarette Use	Nonsmoker	273	1.00	
	Ex-smoker	27	2.20(0.76-6.38)	0.15
	Smoker	64	3.63(1.53-8.64)	<0.01
Personal Aerobic Endurance training (not running)	None	110	1.00	
	1-45 minutes	66	0.50(0.24-1.05)	0.07
	> 45 minutes	188	1.80(0.95-3.42)	0.07
Note: Variables entered into analysis: age, smoking status, personal sprinting, and personal aerobic endurance training (not running).				

7 Discussion

Injury rates reported from AFHSC over the last year was 69% for the Chemical BDE, with limited duty temporary and permanent profiles at 35% and 22% respectively. The most common type of injuries were sprains/strains (42%), of the lower extremities (53%), and attributed to running (35%). A majority of unit PT was comprised of Physical Readiness Training (PRT), including running 5-9 miles a week, calisthenics, and cross-training for > 45 minutes per week. Personal training was comprised of several programs, long distance running, resistance training, cross-training, and other aerobic training for > 45 minutes per week. Older Soldiers (≥26 years old) and male ex-smokers and female current smokers were at higher risk for injury. Protective factors for injury risk (meaning these behaviors appear to reduce injury risk) included calisthenics performed during personal PT (>

45 minutes) and agility drills performed during unit PT (1-45 minutes).

7.1 Injury and Injury Rates

There was a 21% difference between self-reported injuries (48%) and medical record (clinical visit) injuries (69%). This difference could be due to recall bias, as a large percentage of injuries were captured further back in the 12 months through medical record data compared to the self-reported surveys. For example, 67% of the total number of medical record injuries occurred in the first 6 months compared to 46% of self-reported injuries reported in the first 6 months.

The Chemical BDE injury incidence from medical records was 69% (66% for men and 77% for women), while Army wide injury incidence was 58% in 2013. Injury incidence appears relatively high for this brigade when compared to other brigades and Army wide. Unpublished data shows a 43 to 46% injury incidence during a 12-month period for a light infantry brigade in 2010-2011 with an average age of 26.6 ± 5.9 . Comparable data on operational units are limited. Data collected on British Army infantry Soldiers reported a 58.5% injury incidence over a 12 month period, with Soldiers having an average age of 23.7 ± 4.8 years ($n = 646$)^[6]. This higher injury incidence in the Chemical BDE could be due to the older age in this population of 29.0 ± 7.2 years, with older Soldiers seeking medical attention for chronic injuries more often than younger Soldiers.

Injury clinical visits were also high for the Chemical BDE when compared to other brigades and Army wide. For comparison, Chemical BDE experienced 423.7 injury visits per 1,000 Soldiers per month, while other units as well as Army wide ranged from 213.4 to 323.2 injury visits per 1,000 Soldiers per month. A large percentage of injury visits for the Chemical BDE were physical therapy visits (42%) followed by primary physician visits (34%). There is very minimal research provided on what may affect clinic visit rates. One comparison between Chemical BDE and unpublished data from an Infantry brigade shows physical therapy visits account for 36% of all injury visits, suggesting the distribution of clinic visits to be about the same. It is unknown what percentage of clinic visits for other brigades are comprised of permanent profile Soldiers, so this unfortunately cannot be compared. On another note, the third leading type of clinic visit was labeled as "unknown" (20%). Further investigation should be performed as to why the cause for clinic visits are not all being labeled.

The most common type of injuries were sprains/strains (42%), specifically sprains/strains of the lower the extremities, which accounted for 25% of all injuries. Other military investigations have also noted sprains/strains of the lower extremities as the most frequent type of injury^[6-9]. An injury analysis conducted by the Department of Defense (DOD) Military Injury Prevention Workgroup showed lower extremity sprains and strains to be the most frequently reported cause of outpatient visits, the third most frequently reported injury resulting in hospitalization, and the fifth most common cause of limited duty days among active duty Service members^[8]. Additionally, the lower extremity sprain/strain rate accounting for 25% of all injuries, was also identified as the number one contributor to limited duty days in the DOD Military Injury Prevention Workgroup^[8]. An investigation on Army infantry trainees, by Jones et al., analyzed risk factors for lower extremity injuries. Some risk factors identified were older age, smoking, and previous injury^[7]. This investigation also showed older age to be a risk factor for all injuries in general.

7.2 Limited Duty Days

The types of injuries leading to the most limited duty days were sprain/strains, tears (muscle/ligaments), and fractures. Consistent with these findings, an earlier study investigating injuries and limited duty days in the military also indicated that the most common types of injuries

with the greatest amount of limited duty days were overuse pain, fractures and sprain/strains. This review also identified sports and PT as the leading cause of injuries, with falls as the second leading cause of injuries ^[8].

The number of limited duty days may at least partially be attributed to the Chemical BDE population being older than the typical average age of other types of units. It has been shown in multiple studies that as age increases so does the risk of injury ^[7, 9-11]. Therefore, with a greater risk of injury and higher injury incidence when compared to other brigades, it may be likely that there would be more limited duty days. With no other studies published on brigades with Soldiers of an older age, no comparisons of a similar population can be made when looking at the number of limited duty days.

Other civilian investigations somewhat comparable to this study which examined the implementation of athletic trainers or athletic trainer like programs and lost workdays as related to injury ^[12-15]. These athletic training like programs have shown a more rapid return to work, ^[12] a reduction in lost work days, ^[12,14] and the cost effectiveness of in-house athletic training or athletic training like programs compared to outsourcing medical care ^[13]. More unit involvement of Master Fitness trainers could also provide similar results for this BDE.

7.3 Temporary and Permanent Profiles

Permanent profile occurred in 22% of the brigade in November 2014, with 20% being level 2 permanent profiles and 4% being level 3 permanent profile. The Army as a whole reported 13% permanent profiles as of June 2014; The profile level 2's accounted for 11% and profile level 3's accounted for 2%. This is the first time, to the best of our knowledge, that permanent profiles have been tracked during an investigation, so at this time there are no similar investigations for comparison.

The higher percentage of Soldiers on permanent profile could be due to the older average age of the brigade. Table 11 displays how permanent profiles increase with age. As age increased, so did the percentage of Soldiers on permanent profile with 1% of Soldiers ≤ 20 years, 9% of Soldiers aged 21–25, 20% of Soldiers aged 26–29, and 71% of Soldiers ≥ 30 years on permanent profile. Permanent profiles were evenly distributed across genders and battalions. There have been no investigations on risks or specifics of Army population permanent profiles. Permanent profile Soldiers also accounted for a large percentage of injury clinic visits (41%).

7.4 Injury Causes and Risk Factors

7.4.1 Age

Older male Soldiers (≥ 26 years old) had a higher risk for injury. Soldiers ≤ 20 years old had less exposure to many years of PT and may be protected from overuse injuries. Basic training studies have consistently reported older Soldiers exhibit higher risk of injury ^[7, 16-18]. Another investigation found older age (> 27 years) in Special Force individuals ($n = 162$) to have a 2.3 times higher risk for musculoskeletal injuries compared to younger individuals ^[12]. Older age has been linked to a decline in cardiorespiratory and muscular endurance, which may cause greater physiological stress ^[7], and lead to an increase in injury risk.

7.4.2 Smoking

Male ex-smokers and female current smokers had a higher risk for injury compared to non-smokers. Previous studies have demonstrated a higher risk of injury in smokers compared to nonsmokers, increased risk with the number of cigarettes smoked per day, and risk of musculoskeletal injury associated with smoking^[9, 11, 19-26]. The relationship between tobacco use and injury may be due to a compromised ability to repair damaged tissues, thereby increasing susceptibility to the repetitive micro trauma that leads to injury^[27]. In one investigation, researchers showed that tibial fracture healing took 24% longer in smokers compared to non-smokers^[28]. Another study showed that smokers experienced impaired wound healing when compared to non-smokers^[29]. Therefore, in smokers maintaining high levels of physical fitness to accomplish physically demanding tasks, and military occupational specialty (MOS) requirements may result in weakened tissues from training and overuse, which may result in a greater susceptibility of injury.

7.4.3 Physical Training

The most common cause of injury was running (35%), PT/sports/recreation (23%), and lifting or moving heavy objects (15%), (Table 8). This is consistent with other military studies showing that running accounts for about 30% of the injuries and the majority of injuries occurring in Army Soldiers are attributed to physical fitness and sports^[5-6, 10-12]. A study by Loring et al, showed more than half of all injuries were due to sports, exercise, and recreational activities (SERA) for all of the military services in 2008. Of these SERA injuries, running/jogging was the most frequently reported activity causing injury for military service members (45%) and weight training was the second most frequently reported activity causing injury (8%)^[13]. A study by Grier et al. investigated risk factors for running injuries and indicated that Soldiers with higher BMI and slower 2 mile APFT times were at great risk for running injuries. Soldiers who performed resistance training had lower risk of running injuries^[14]. This investigation did not find higher injury risk with resistance training, but this could be due to the older population in this study compared to the above mentioned studies.

Agility training 1-45 minutes per week during unit PT had a protective effect against injury for male Soldiers. Agility drills were defined as “drills requiring lateral movements, typically using cones or ladders, obstacle course, etc.” A systematic review by Bullock et al. recommends multi axial, neuromuscular, proprioceptive, and agility training as one of the top strategies for the prevention of PT-related injuries^[34]. A study by Grier et al. evaluating PT for a U.S. Army Brigade Combat Team also found Soldiers performing agility drills had a lower risk of injury^[33]. Soldiers performing agility training may be performing less running or other activities that could lead to a higher risk of injury. A U.S. Air Force investigation showed that overuse injuries were decreased by 67% when running mileage was reduced by 50% and was replaced with agility, interval training, and functional resistance training (replaced bodybuilding type resistance training)^[35].

Calisthenics during unit and personal PT appeared to lessen the risk of injury for male Soldiers in this investigation. Calisthenics were defined as “jumping jacks, windmills, mountain climbers, etc.” The Soldiers performing calisthenics during personal PT for > 45 minutes a week were on average slightly younger than Soldiers not performing any calisthenics during personal time. This could be one explanation as to why this was shown to lessen injury risk. Another explanation as to why > 45 minutes of calisthenics during personal training and unit training can lessen the risk of injury is that the exercises required to perform calisthenics requires the entire body, meaning Soldiers that are on profile or injured are less likely to be able to perform calisthenics as it may aggravate their injury.

8 Conclusions and Recommendations

Injury rates (69%) and permanent profiles (22%) of the 48th Chemical BDE were higher compared to other brigades and the Army as a whole. However, this BDE is comprised of a slightly older population and older age is a significant risk factor for musculoskeletal injury. Therefore, older Soldiers might consider seeking guidance from MFT or the local AWC for injury or profile appropriate adaptations to unit PT. A specially designed unit PT program for Soldiers 35 years or older that can provide alternative low-impact exercises in a group setting may help keep older Soldiers fit.

In addition to age, history of smoking is a significant risk factor which cannot be modified. Smoking prevention and cessation programs should continue to be a priority.

Overall, the Chemical BDE leadership should advocate healthier lifestyles and moderate PT programs by encouraging Soldiers, especially those with permanent profiles and of older age, to seek individualized care through AWC, MFT, and/or group PT programs overseen by certified instructors. Unit leadership should consider alternating high intensity unit PT with moderate to easier PT days to prevent injuries due to fatigue or overuse.

Healthier lifestyles and moderate training regimens can reduce injuries and associated LDD, medically not ready rates, and the number of personnel on profiles amongst the Chemical BDE.

Another follow-up survey is recommended to reassess changes in physical fitness, permanent profiles, and injury rates that have taken place within the brigade.

9 Points of Contact

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Appendix A

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Appendix B

Supplemental Tables

Table B-1. Survey Responses by Battalion

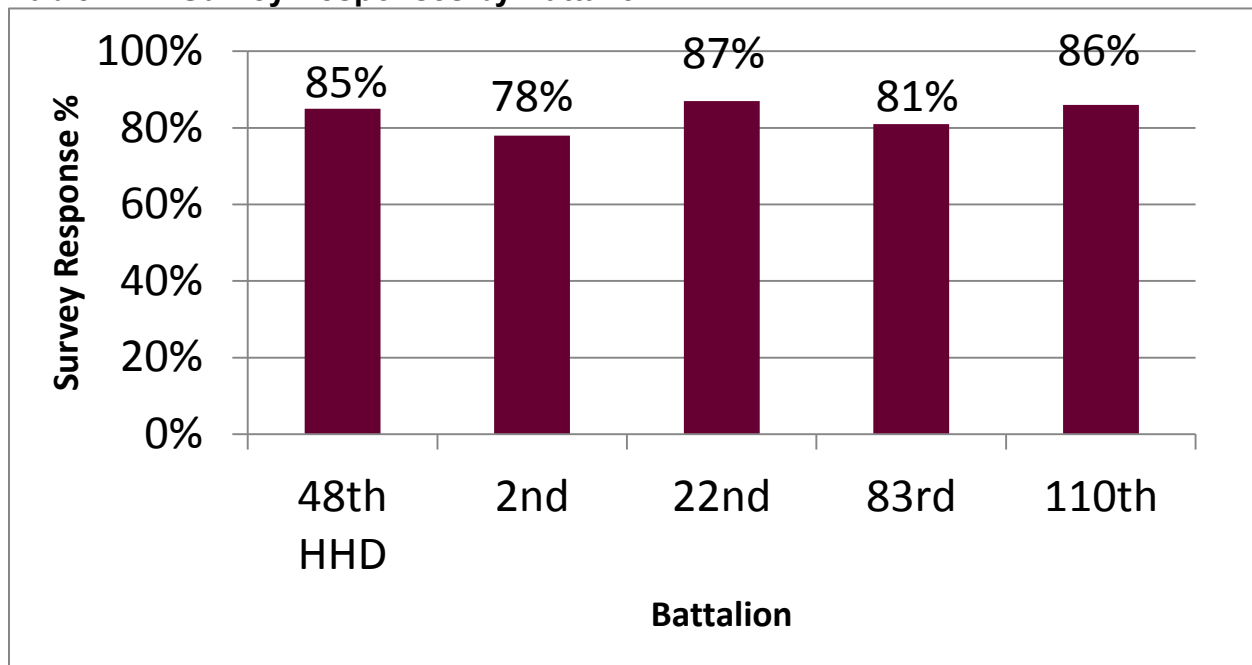


Table B-2. Survey and DMSS Results: Personal Characteristics Comparing Differences between Men and Women

Variable	Level of Variable	Men	Women	Men and Women	Difference Between Men and Women	Chi-Square p-value (men vs. women)
		n(%)	n(%)	n(%)	%	
Gender	Men			1,099(74%)		
	Women			391(26%)		
Age	≤ 20	82(8%)	64(16%)	146(10%)	8%	<0.01
	21-25	293(27%)	137(35%)	430(29%)	8%	
	26-29	203(19%)	86(22%)	289(19%)	3%	
	≥ 30	521(47%)	104(27%)	625(42%)	20%	
BMI	<18.5	35(3%)	33(9%)	68(5%)	6%	<0.01
	18.5-24.9	327(30%)	201(52%)	528(36%)	22%	
	25.0-29.9	528(48%)	136(35%)	664(45%)	13%	
	≥30	202(19%)	15(4%)	217(15%)	15%	

Table B-2. Survey and DMSS Results: Personal Characteristics Comparing Differences between Men and Women(continued)

Variable	Level of Variable	Men	Women	Men and Women	Difference Between Men and Women	Chi-Square p-value (men vs. women)
		n(%)	n(%)	n(%)	%	
Rank	E1-E2	51(5%)	20(5%)	71(5%)	0%	<0.01
	E3-E4	414(38%)	183(47%)	597(40%)	9%	
	E5-E6	336(31%)	88(23%)	424(29%)	8%	
	E7-E9	124(11%)	21(5%)	145(10%)	6%	
	O1-O3	123(11%)	61(16%)	184(12%)	5%	
	O4-O7	40(4%)	14(4%)	54(4%)	0%	
	W1-W3	11(1%)	4(1%)	15(1%)	0%	
Race	Caucasian	508(46%)	132(34%)	640(43%)	12%	<0.01
	Asian	48(4%)	26(7%)	74(5%)	3%	
	Black	350(32%)	166(43%)	516(35%)	11%	
	Hispanic	152(14%)	56(14%)	208(14%)	0%	
	American Indian	6(<1%)	3(1%)	9(1%)	0%	
	Other/Unknown	30(3%)	7(2%)	37(3%)	1%	
Education Level	No High School	6(1%)	----	7(<1%)	1%	0.02
	High School	690(64%)	268(69%)	958(65%)	5%	
	Some College	200(18%)	55(14%)	255(17%)	4%	
	Bachelors	126(12%)	53(14%)	179(12%)	2%	
	Masters	64(6%)	12(3%)	76(5%)	3%	
	Doctorate	--	1(<1%)	1(<1%)	1%	
Marital Status	Single	314(29%)	154(40%)	468(32%)	11%	<0.01
	Married	719(66%)	193(50%)	912(62%)	16%	
	Other (Separated/ Divorced/Widowed)	61(6%)	43(11%)	43(11%)	5%	
Battalion	Battalion 1	96(9%)	41(11%)	137(9%)	2%	0.06
	Battalion 2	251(23%)	95(24%)	346(23%)	1%	
	Battalion 3	274(25%)	80(21%)	354(24%)	4%	
	Battalion 4	250(23%)	109(28%)	359(24%)	5%	
	Battalion 5	228(21%)	66(17%)	294(20%)	4%	

Table B-3. Survey Results: Military Occupational Specialty and Physical Demand Levels Comparing Differences between Men and Women

Variable	Level of Variable	Men	Women	Men and Women	Difference Between Men and Women
		n(%)	n(%)	n(%)	%
Military Occupational Specialty	Chemical Warfare	711(65%)	277(71%)	988(66%)	6%
	Signals/Communication	37(3%)	13(3%)	50(3%)	0%
	Military Intel/Electronic warfare	10(1%)	8(2%)	18(1%)	1%
	Support/Administration	36(3%)	29(7%)	65(4%)	4%
	Medical	25(2%)	8(2%)	33(2%)	0%
	Supply and Logistics	51(5%)	35(9%)	86(6%)	4%
	Repairer & Maintenance	156(14%)	17(4%)	173(12%)	10%
	Explosives	72(7%)	3(1%)	75(5%)	6%
MOS Physical Demand Level (Enlisted Only)	Very Heavy	807(88%)	248(80%)	1,055(86%)	8%
	Moderately Heavy	40(4%)	27(9%)	67(6%)	5%
	Heavy	59(6%)	34(11%)	93(8%)	5%
	Medium	3(<1%)	--	3(<1%)	<1%
	Light	8(1%)	3(1%)	11(1%)	0%

Table B-4. Unit PT Data by Gender

Variable	Variable Level	Overall	Male(n=1,098)	Female(n=396)
Currently participate in Unit PT	Yes	1,295(87%)	983(90%)	312(79%)
	No	197(13%)	114(10%)	83(21%)
How would you rate Unit PT	Challenging	159(12%)	115(12%)	44(14%)
	Hard	163(13%)	129(13%)	34(11%)
	Somewhat Hard	421(32%)	311(31%)	110(35%)
	Moderate	448(34%)	350(35%)	98(31%)
	Easy	110(8%)	83(8%)	27(9%)
Are new Soldiers slowly introduced to Unit PT?	Yes	871(67%)	676(68%)	195(62%)
	No	429(33%)	312(32%)	117(37%)
Unit PT Program based on?	Traditional Army PT	318(24%)	221(22%)	97(31%)
	PRT	689(53%)	544(55%)	145(46%)
	Cross-training	110(8%)	87(9%)	23(7%)
	Extreme Conditioning	29(2%)	22(2%)	7(2%)
	Combination	145(11%)	106(11%)	39(13%)
Unit PT participation each week?	1-2 times	82(6%)	62(6%)	20(6%)
	3-5 times	1093(84%)	831(84%)	262(84%)
	6-7 times	105(8%)	79(8%)	26(8%)
	> 7 times	18(1%)	14(1%)	4(1%)
Unit PT Distance running Miles	None/< 1 mile	117(9%)	80(8%)	39(13%)
	1-3 miles	738(57%)	559(57%)	179(58%)
	4-5 miles	411(32%)	323(33%)	88(28%)
	≥ 6 miles	27(2%)	21(2%)	6(2%)

Table B-4. Unit PT Data by Gender (continued)

Variable	Variable Level	Overall	Male(n=1098)	Female(n=396)
Unit PT Distance Running Frequency	None/< 1 time per week	231(18%)	173(18%)	58(19%)
	1-2 times per week	337(26%)	265(27%)	72(23%)
	3-4 times per week	691(54%)	523(53%)	168(54%)
	≥ 5 times per week	33(3%)	21(2%)	12(4%)
Total Unit Running Mileage per week	None	67(5%)	67(7%)	0(0%)
	1-4 miles	161(13%)	124(13%)	37(14%)
	5-9 miles	676(55%)	521(54%)	155(57%)
	10-14 miles	233(19%)	183(19%)	50(19%)
	≥ 15 miles	104(8%)	75(8%)	29(11%)
	Avg Mileage	8.8±4.1SD	8.7±3.9SD	9.1±4.7SD
Unit PT Sprinting amount of time per session	None/< 15 minutes	295(23%)	217(22%)	78(25%)
	16-30 minutes	466(36%)	364(37%)	102(33%)
	31-45 minutes	356(24%)	269(27%)	88(28%)
	46-60 minutes	155(12%)	116(12%)	39(13%)
	>60 minutes	21(2%)	17(2%)	3(1%)
Unit PT Sprinting frequency	None/< 1 time per week	293(23%)	216(22%)	77(25%)
	1-2 times per week	800(62%)	619(63%)	181(58%)
	3-4 times per week	186(14%)	137(14%)	49(16%)
	≥ 5 times per week	14(1%)	11(1%)	3(1%)
Unit PT Sprinting Total Weekly time spent	None	101(8%)	70(7%)	31(10%)
	≤ 49 minutes	803(62%)	615(63%)	188(61%)
	50-99 minutes	230(18%)	180(18%)	50(16%)
	≥ 100 minutes	152(12%)	113(12%)	39(13%)
	Avg Time	51.6±42 SD	51.2±41.2SD	52.8±44.7SD
Unit PT Calisthenics amount of time per session	None/< 15 minutes	496(38%)	373(38%)	126(41%)
	16-30 minutes	356(28%)	274(28%)	80(26%)
	31-45 minutes	276(21%)	211(22%)	65(21%)
	46-60 minutes	140(11%)	107(11%)	32(10%)
	>60 minutes	24(2%)	17(2%)	7(2%)
Unit PT Calisthenics frequency	None/< 1 time per week	224(17%)	166(17%)	58(19%)
	1-2 times per week	609(47%)	465(47%)	144(47%)
	3-4 times per week	272(21%)	211(22%)	61(20%)
	≥ 5 times per week	188(15%)	141(14%)	47(15%)
Unit PT Calisthenics total weekly time spent	None	92(7%)	69(7%)	23(7%)
	≤ 49 minutes	597(46%)	446(46%)	151(49%)
	50-99 minutes	326(25%)	259(27%)	67(22%)
	≥ 100 minutes	271(21%)	203(21%)	68(22%)
	Avg Time	68.1±57.0SD	67.4±53.3SD	70.5±67.2SD
Unit PT Agility Drills amount of time per session	None/< 15 minutes	629(49%)	475(48%)	154(50%)
	16-30 minutes	285(22%)	224(23%)	61(20%)
	31-45 minutes	233(18%)	178(18%)	55(18%)
	46-60 minutes	125(10%)	94(10%)	31(10%)
	>60 minutes	18(2%)	11(1%)	9(3%)

Table B-4. Unit PT Data by Gender (continued)

Variable	Variable Level	Overall	Male(n=1098)	Female(n=396)
Unit PT Agility Drills frequency	None/< 1 time per week	671(52%)	493(50%)	178(57%)
	1-2 times per week	428(33%)	337(34%)	91(29%)
	3-4 times per week	150(12%)	117(12%)	33(11%)
	≥ 5 times per week	43(3%)	35(4%)	8(3%)
Unit PT Agility total weekly time spent	None	373(30%)	82(8%)	95(32%)
	≤ 49 minutes	595(48%)	479(49%)	136(46%)
	50-99 minutes	158(13%)	218(22%)	36(12%)
	≥ 100 minutes	127(10%)	197(20%)	31(10%)
	Avg Time	51.8±55.4 SD	51.0±50.2SD	54.3±70.1SD
Unit PT Resistance Training amount of time per session	None/< 15 minutes	490(38%)	363(37%)	127(41%)
	16-30 minutes	289(22%)	223(23%)	66(21%)
	31-45 minutes	298(23%)	224(23%)	74(24%)
	46-60 minutes	187(15%)	150(15%)	37(12%)
	>60 minutes	28(2%)	22(2%)	6(2%)
Unit PT Resistance Training frequency	None/< 1 time per week	627(49%)	461(47%)	166(54%)
	1-2 times per week	502(39%)	389(40%)	113(37%)
	3-4 times per week	133(10%)	109(11%)	24(8%)
	≥ 5 times per week	30(2%)	23(3%)	7(2%)
Unit PT Resistance Training total weekly time spent	None	351(27%)	260(27%)	91(30%)
	≤ 49 minutes	559(44%)	420(43%)	139(45%)
	50-99 minutes	189(15%)	145(15%)	44(14%)
	≥ 100 minutes	183(14%)	15(15%)	33(11%)
	Avg Time	58.9±62.3SD	60.6±62.1SD	53.5±62.7SD
Unit PT Cross-training amount of time per session	None/< 15 minutes	230(18%)	176(18%)	54(17%)
	16-30 minutes	353(27%)	266(27%)	87(28%)
	31-45 minutes	446(35%)	338(34%)	108(35%)
	46-60 minutes	230(18%)	176(18%)	54(17%)
	>60 minutes	33(3%)	26(3%)	7(2%)
Unit PT Cross-training total weekly time spent	None	105(8%)	82(8%)	23(7%)
	≤ 49 minutes	621(48%)	479(49%)	142(46%)
	50-99 minutes	300(23%)	218(22%)	82(27%)
	≥ 100 minutes	259(20%)	197(20%)	62(20%)
	Avg Time	65.0±55.8SD	64.1±52.1SD	67.8±66.0SD
Unit PT Cross-training frequency	None/< 1 time per week	299(23%)	225(23%)	74(24%)
	1-2 times per week	753(58%)	570(58%)	183(59%)
	3-4 times per week	200(16%)	160(16%)	40(13%)
	≥ 5 times per week	40(3%)	27(3%)	13(4%)

Table B-5. Personal PT Data by Gender

Variable	Variable Level	Overall	Male (n=1098)	Female (n=396)
Currently participate in Personal PT	Yes	1,239(83%)	917(84%)	322(82%)
	No	253(17%)	180(16%)	73(19%)
Goal of Personal PT	Lose Weight	293(23%)	189(21%)	104(32%)

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	Gain muscle mass	226(18%)	184(20%)	42(13%)
	Increase aerobic capacity	138(11%)	99(11%)	39(12%)
	Increase aerobic capacity and gain muscle mass	276(22%)	223(24%)	53(16%)
	Maintain current fitness levels	232(19%)	164(18%)	68(21%)
	Unit PT is not challenging, so I need additional PT to maintain fitness	78(6%)	59(6%)	19(6%)
Personal PT is based on	Traditional Army PT	335(27%)	246(27%)	89(27%)
	PRT	165(13%)	126(14%)	39(12%)
	Cross-training	234(19%)	171(19%)	63(19%)
	Extreme Conditioning	193(15%)	137(15%)	56(17%)
	Combination	128(10%)	90(10%)	38(12%)
	Other	188(15%)	148(16%)	40(12%)
Personal PT Distance running miles	None/<1 mile	201(16%)	144(16%)	57(18%)
	1-3 miles	712(57%)	504(55%)	208(64%)
	4-5 miles	277(22%)	226(25%)	51(16%)
	≥ 6 miles	52(4%)	43(5%)	9(3%)
Personal PT Distance running frequency	None/< 1 time per week	183(15%)	131(14%)	52(16%)
	1-2 times per week	86(7%)	63(7%)	23(7%)
	3-4 times per week	540(43%)	395(43%)	145(45%)
	≥ 5 times per week	433(35%)	328(36%)	105(32%)
Total Personal Running Mileage per week	None	181(15%)	131(14%)	50(16%)
	≤ 4 miles	350(28%)	248(27%)	102(32%)
	5-9 miles	433(35%)	318(35%)	115(36%)
	10-14 miles	128(10%)	100(11%)	28(9%)
	≥ 15 miles	144(12%)	118(13%)	26(8%)
	Avg Mileage	8.0±6.1SD	8.2±6.0SD	7.5±6.4SD
Personal PT Sprinting amount of time per session	None/< 15 minutes	562(45%)	411(45%)	151(47%)
	16-30 minutes	249(28%)	251(27%)	98(30%)
	31-45 minutes	213(17%)	163(18%)	50(16%)
	46-60 minutes	91(7%)	73(8%)	18(6%)
	> 60 minutes	24(2%)	19(2%)	5(2%)
Personal PT Sprinting frequency	None/< 1 time per week	544(44%)	416(45%)	128(40%)
	1-2 times per week	499(40%)	355(39%)	144(45%)
	3-4 times per week	171(14%)	129(14%)	42(13%)
	≥ 5 times per week	25(2%)	17(2%)	8(3%)

Table B-5. Personal PT Data by Gender (continued)

Variable	Variable Level	Overall	Male (n=1098)	Female (n=396)
Personal PT Sprinting total weekly time spent	None	364(30%)	278(31%)	86(27%)
	1-49 minutes	544(45%)	394(44%)	150(48%)
	50-99 minutes	154(13%)	109(12%)	45(14%)
	≥100 minutes	159(13%)	124(14%)	35(11%)
	Avg Time	58.2±60.2SD	58.7±61.1SD	56.7±57.7SD
Personal PT Calisthenics amount of time per session	None/<15 minutes	685(55%)	411(45%)	170(53%)
	16-30 minutes	303(25%)	251(27%)	82(26%)
	31-45 minutes	144(12%)	163(18%)	43(13%)
	46-60 minutes	84(7%)	73(8%)	20(6%)
	> 60 minutes	23(2%)	19(2%)	7(2%)
Personal PT Calisthenics frequency	None/<1 time per week	599(48%)	449(49%)	150(47%)
	1-2 times per week	403(33%)	301(33%)	102(31%)
	3-4 times per week	180(15%)	124(14%)	56(17%)
	≥ 5 times per week	57(5%)	43(5%)	14(4%)
Personal PT Calisthenics total weekly time spent	None	458(37%)	352(37%)	106(34%)
	1-49 minutes	418(34%)	310(34%)	108(34%)
	50-99 minutes	89(7%)	65(7%)	24(8%)
	≥100 minutes	259(21%)	181(20%)	78(25%)
	Avg Time	64.1±64.9SD	64.4±68.3SD	63.3±54.7SD
Personal PT Agility Drills amount of time per session	None/<15 minutes	796(64%)	584(64%)	212(66%)
	16-30 minutes	223(18%)	166(18%)	57(18%)
	31-45 minutes	132(11%)	97(11%)	35(11%)
	46-60 minutes	67(5%)	54(6%)	13(4%)
	>60 minutes	21(2%)	16(2%)	5(2%)
Personal PT Agility Drills frequency	None/< 1 time per week	803(65%)	588(64%)	215(67%)
	1-2 times per week	290(23%)	216(24%)	74(23%)
	3-4 times per week	120(10%)	96(11%)	24(8%)
	≥5 times per week	26(2%)	17(2%)	9(3%)
Personal PT Agility total weekly time spent	None	655(54%)	485(54%)	170(55%)
	1-9 minutes	353(29%)	259(29%)	94(30%)
	50-99 minutes	93(8%)	67(7%)	26(8%)
	≥ 100 minutes	114(9%)	93(10%)	21(7%)
	Avg Time	62.8±72.8SD	64.2±72.9SD	58.5±72.7SD
Personal PT Resistance Training amount of time per session	None/< 15 minutes	365(30%)	244(27%)	121(38%)
	16-30 minutes	300(24%)	205(22%)	95(30%)
	31-45 minutes	241(20%)	179(20%)	62(19%)
	46-60 minutes	219(18%)	187(20%)	32(10%)
	> 60 minutes	114(9%)	102(11%)	12(4%)
Personal PT Resistance Training frequency	None/< 1 time per week	361(29%)	252(28%)	109(34%)
	1-2 times per week	389(31%)	275(30%)	114(35%)
	3-4 times per week	308(25%)	246(27%)	62(19%)
	≥ 5 times per week	181(15%)	144(16%)	37(12%)

Table B-5. Personal PT Data by Gender (continued)

Variable	Variable Level	Overall	Male (n=1098)	Female (n=396)
Personal PT Resistance Training total weekly time Spent	None	242(20%)	172(19%)	70(22%)
	1-49 minutes	358(29%)	246(27%)	112(35%)
	50-99 minutes	170(14%)	115(13%)	55(17%)
	≥ 100 minutes	459(37%)	379(42%)	80(25%)
	Avg Time	122.1±118.3SD	132.7±124.1SD	90.4±92.0SD
Personal PT Cross-training amount of time per session	None/< 15 minutes	427(35%)	323(35%)	104(32%)
	16-30 minutes	352(28%)	263(29%)	89(28%)
	31-45 minutes	257(21%)	178(19%)	79(25%)
	46-60 minutes	166(13%)	125(14%)	41(13%)
	>60 minutes	37(3%)	28(3%)	9(3%)
Personal PT Cross-training total weekly time spent	None	302(25%)	237(26%)	65(20%)
	1-49 minutes	419(34%)	308(34%)	111(35%)
	50-99 minutes	204(17%)	150(16%)	54(17%)
	≥ 100 minutes	305(25%)	217(24%)	88(28%)
	Avg Time	84.5±77.0SD	83.4±77.9SD	87.6±74.8SD
Personal PT Cross-training frequency	None/<1 time per week	431(35%)	332(36%)	99(31%)
	1-2 times per week	447(36%)	325(35%)	122(38%)
	3-4 times per week	278(22%)	206(23%)	72(22%)
	≥ 5 times per week	83(7%)	54(6%)	29(9%)
Personal PT Aerobic Training amount of time per session	None/< 15 minutes	444(36%)	348(38%)	96(30%)
	16-30 minutes	334(27%)	246(27%)	88(27%)
	31-45 minutes	258(21%)	181(20%)	77(24%)
	46-60 minutes	159(13%)	112(12%)	47(15%)
	> 60 minutes	44(4%)	30(3%)	14(4%)
Personal PT Aerobic Training frequency	None/< 1 time per week	450(36%)	359(39%)	91(28%)
	1-2 times per week	426(34%)	306(33%)	120(37%)
	3-4 times per week	265(21%)	191(21%)	74(23%)
	≥ 5 times per week	98(8%)	61(7%)	37(12%)
Personal PT Aerobic Training total weekly time spent	None	320(26%)	259(29%)	61(19%)
	≤ 1-49 minutes	389(32%)	291(32%)	98(31%)
	50-99 minutes	209(17%)	145(16%)	64(20%)
	≥ 100 minutes	310(25%)	215(24%)	95(30%)
	Avg Time	86.4±80.3SD	83.1±78.9SD	94.7±83.2SD

Table B-6. Survey Results: Army Physical Fitness Test and BMI

Variable	Variable Level	Men n(%)	Variable Level	Women n(%)
2 Mile Run (minutes and fraction of a minutes)	≤ 13.92 min	220(25%)	≤ 16.00 min	80(26%)
	13.93-14.93 min	220(25%)	16.01-17.27 min	76(24%)
	14.94-15.90 min	217(25%)	17.28-18.33 min	79(25%)
	≥ 15.91 min	217(25%)	≥ 18.34 min	78(25%)
Push-Ups	≤55 reps	277(27%)	≤33 reps	97(26%)
	56-65 reps	271(26%)	34-42 reps	107(29%)
	66-74 reps	231(22%)	43-50 reps	106(29%)
	≥ 76 reps	252(24%)	≥ 51 reps	60(16%)
Sit-Ups	≤ 60 reps	292(29%)	≤ 60 reps	109(30%)
	61-68 reps	235(23%)	61-68 reps	78(21%)
	69-77 reps	240(24%)	69-78 reps	100(27%)
	≥ 78 reps	250(25%)	≥ 79 reps	78(21%)
Total APFT Score	≤ 238	219(25%)	≤ 243	77(25%)
	239-261	218(25%)	244-263	78(25%)
	262-280	220(25%)	264-285	78(25%)
	≥ 281	208(24%)	≥ 286	24(24%)
BMI	<18.5	35(3%)	<18.5	33(9%)
	18.5-24.9	327(30%)	18.5-24.9	201(52%)
	25.0-29.9	528(48%)	25.0-29.9	136(35%)
	≥ 30.0	202(19%)	≥ 30.0	15(4%)

Table B-7. Multivariate Logistic Regression: Injury Risk Factors for Unit PT for male Soldiers including APFT (N=849)

Variable	Variable Level	N	Odds Ratio (95% CI)	p-value
Age	≤ 20	76	1.00	
	21-25	260	1.31(0.78-2.21)	0.31
	26-29	169	2.17(1.24-3.79)	0.01
	≥ 30	344	2.76(1.65-4.62)	<0.01
Total Unit Distance Running Mileage	None	62	1.00	
	1-4 miles	99	0.29(0.13-0.62)	<0.01
	5-9 miles	459	0.42(0.21-0.84)	0.01
	≥ 10 miles	229	0.48(0.23-0.98)	0.04
Unit PT Agility Training total weekly time spent	None	275	1.00	
	1-45 minutes	341	0.63(0.44-0.89)	0.01
	> 45 minutes	233	0.86(0.58-1.27)	0.45
Variables entered into analysis: Age, BMI, smoking status, unit running total mileage, unit sprinting, unit calisthenics, unit agility, and unit cross training, APFT				

Appendix C

Survey Template

PRIVACY ACT STATEMENT – HEALTH CARE RECORDS, FITNESS TEST SCORES, AND QUESTIONNAIRE
1. AUTHORITY FOR COLLECTION OF INFORMATION INCLUDING SOCIAL SECURITY NUMBER Public Law 104-191, Section 1178; Executive Order 9397; Section 8103, Title 5, United States Code
2. PRINCIPLE PURPOSES FOR WHICH INFORMATION IS INTENDED TO BE USED This form provides you the advice required by the Privacy Act of 1974. The information obtained from this project will be used to reduce injuries and improve the health and fitness of Soldiers. We will need to obtain your social security number in order to link your questionnaire information with other data such as Army Physical Fitness Test (APFT) scores and information on injuries you may have had in the last year. Using your social security number is the only way we can do this. We will strictly limit access to your social security number by shredding all paper files after scanning, having all computer files password protected, and removing SSNs and name after data are linked. The questionnaire is to obtain information on current physical fitness activities, tobacco use, and previous or current injuries.
3. ROUTINE USES The primary use of this information is to improve the health of those in the Chemical Brigade . The data obtained from the questionnaires will be included in a database that contains the same information for all Soldiers participating in this project. The only personnel having access to this information will be the public health officials who will analyze the information. You will not be personally identified in any report or any output of any type since the interest is in the health and fitness of the Unit and not the health and fitness of any single individual. The database that is established will identify current level of fitness and factors that lower Soldiers' risk of injury and enhance fitness. The database will be used to make recommendations to decision makers regarding programs and policies that might improve fitness and reduce the incidence of injury.
4. WHETHER DISCLOSURE IS MANDATORY OR VOLUNTARY AND EFFECT ON INDIVIDUAL OF NOT PROVIDING INFORMATION Disclosure of the requested information is voluntary. If you do not disclose the information you will not be included in the database and you will not participate in the project designed to reduce injuries and improve the health and fitness of Soldiers.

Demographics

Today's Date

Date (mm/dd/yyyy) _____

Background Details

First Name _____

Last Name _____

SSN (**NO dashes**) _____

What is your age?

☐ 17-65+

What is your weight (lbs)?

☐ 90-300

What is your height (feet'inches")?

☐ 4'2"-7'2"

What is your gender?

☐ Male

☐ Female

What is your component?

☐ Active duty

☐ Reserve

☐ National Guard

☐ Other (**Please Specify**) _____

What is your military occupational specialty (MOS), AOC or Functional Area? (e.g., 11B)

Please Specify _____

What is your rank?

☐ O1 - ☐ O10

☐ E1 - ☐ E9

☐ W1 - ☐ W5

☐ Other: Please Specify _____

Pages 3-5 were omitted for this report to keep Brigade and Battalions de-identified

Are you currently on permanent profile?

☐ Yes

☐ No

How long have you been on permanent profile? (If not applicable, fill in the a "0").

Years _____
Months _____
Days _____

Does your permanent profile limit your physical training or job duties?

- ☐ No
- ☐ Little impact
- ☐ Some impact
- ☐ Significant impact
- ☐ Unable to perform military duties as assigned

Were you tape tested at your last weigh in?

- ☐ No
- ☐ Yes

Do you participate in any special designated Army alternative PT programs (e.g. Profile, Weight Control, Pregnancy, etc)?

- ☐ No
- ☐ Yes

Which Army alternative PT program do you participate in?

- ☐ Profile PT
- ☐ Weight Control PT
- ☐ Pregnancy PT
- ☐ Other (Please Specify) _____

Rate your level compared to others your age and gender

		Far less than average	Slightly less than average	Average	Greater than average	Much greater than average
	Endurance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Sprint Speed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Strength	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Flexibility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Body Fat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you were asked to walk briskly up a slight incline of 100 yards (the length of a football field), what would your exertion level be?

		None	Very light	Light	Somewhat hard (a little heavy breathing, but OK to continue and complete)	H a r d (Heavy breathing)	Very hard (very strenuous, heavy breathing, but you'll have to push to continue)	Maximal exertion (too strenuous/tired or difficult breathing to complete)
	Exertion Level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Army Physical Fitness Test (APFT)

What was the approximate date of your most recent APFT?

Approximate Date (mm/dd/yyyy) _____

What were the raw scores on your most recent APFT (If not applicable, fill in the a "0").

Push-ups (repetitions) _____

Sit-ups (repetition) _____

2-Mile Run time (min:sec) _____

Other (**Please Specify**) _____

Are you on permanent profile that restricts you from participating in any of the APFT events?

- ☐ Yes
- ☐ No

If "Yes", which event(s) are you restricted from (Select all that apply)?

- ☐ Push-ups
- ☐ Sit-ups
- ☐ Run

Injury History (Previous 12 months through June 2014)

The following questions are about physical injuries that have limited your physical activities. Physical injuries include those caused by:

1) **A single incident or accident** (examples include: tripping and twisting ankle while marching, falling from a ladder, getting hit by/bumping into an object, or as the result of an automobile crash; heat injury)

2) **Overuse of a body area** (examples include running long distances, repeatedly lifting/pulling/pushing/moving objects for job tasks or for physical training)

How many injuries have you experienced in the last 12 months?

- ☐ None
- ☐ 1
- ☐ 2
- ☐ 3 or more

If you reported more than 1 injury, please first answer the questions pertaining to the injury that **MOST limited your physical abilities in the last 12 months**. You will then be asked the same questions for your **2nd most physically limiting** injury. Even if you reported 3 or more injuries, you will only be asked questions on the 2 most physically limiting injuries.

Estimate the apprx date of the injury #1 (past 12 mnths (Not Including July 2014)).

- ☐ June 2014
- ☐ May 2014
- ☐ April 2014
- ☐ March 2014
- ☐ February 2014
- ☐ January 2014
- ☐ December 2013
- ☐ November 2013
- ☐ October 2013
- ☐ September 2013
- ☐ August 2013
- ☐ July 2013
- ☐ June 2013
- ☐ May 2013

Primary body area injured?

- ☐ Head
- ☐ Neck
- ☐ Shoulders
- ☐ Upper Arm (bicep/tricep)
- ☐ Lower Arm (forearm)
- ☐ Elbow
- ☐ Wrist
- ☐ Hand
- ☐ Chest/ribs
- ☐ Abdomen
- ☐ Back (lower)
- ☐ Back (upper)
- ☐ Spine
- ☐ Hip
- ☐ Upper leg (Thigh/Hamstring)
- ☐ Lower leg (Shin/Calf)
- ☐ Knee
- ☐ Ankle
- ☐ Foot
- ☐ Heat/Cold Injury - Non-specific body area
- ☐ Other (**Please Specify**) _____

Type of injury #1?

- ☐ Abrasion
- ☐ Blister
- ☐ Bruise/contusion

- ☐ Bursitis
- ☐ Cut/laceration
- ☐ Dislocation
- ☐ Fasciitis (e.g., plantar fasciitis)
- ☐ Fracture/Break
- ☐ Heat injury
- ☐ Cold injury
- ☐ Nerve injury
- ☐ Sprain/strain overuse
- ☐ Sprain/strain traumatic
- ☐ Tear (muscle/ligaments)
- ☐ Blunt force trauma
- ☐ Spinal injury (e.g., bulging or slipped disk)
- ☐ Other (**Please Specify**) _____

Activity associated with the injury #1?

- ☐ Gunshot, missile, or blast
- ☐ Lifting or moving heavy objects
- ☐ Physical training
- ☐ Repairing or maintaining equipment
- ☐ Riding or driving in a motorized vehicle
- ☐ Rough-housing or fighting
- ☐ Sports/recreation
- ☐ Stepping/climbing
- ☐ Walking or hiking
- ☐ Marching - with load
- ☐ Marching - no load
- ☐ Other (**Please Specify**) _____

Please specify the sport causing the injury #1:

- ☐ Football
- ☐ Basketball
- ☐ Soccer
- ☐ Volleyball
- ☐ Softball/baseball
- ☐ Running (e.g., road racing/marathons)
- ☐ Other (**Please Specify**) _____

If injury #1 was from Physical training, please specify.

- ☐ Running
- ☐ Weight-training
- ☐ Agility/stretching
- ☐ Extreme conditioning
- ☐ Other (**Please Specify**) _____

While injured in a motorized vehicle you were...

- ☐ Driving a military vehicle

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- ☐ Riding in a military vehicle
- ☐ Driving a civilian vehicle
- ☐ Riding in a civilian vehicle

Cause associated with the injury #1?

- ☐ Falling onto an object/surface/the ground
- ☐ Contact (hit by/against) a raised object/surface (**Please Specify Object**)

-
- ☐ Cut or puncture by a sharp tool, object or instrument
 - ☐ Direct contact by a person
 - ☐ Impact from a blast
 - ☐ Overuse/repetitive activity
 - ☐ Single twisting/over-extension
 - ☐ Single overexertion effort - moved too fast, too much weight
 - ☐ Specific military task (e.g. parachuting) (**Please Specify**) _____
 - ☐ Burn (by fire, hot substance or object, or steam)
 - ☐ Heat injury
 - ☐ Cold injury
 - ☐ Animal bite
 - ☐ Insect bite
 - ☐ Other (**Please Specify**) _____

If injury #1 was from a fall, please specify. Fall was from...

- ☐ Motor vehicle
- ☐ Aircraft
- ☐ Raised surface or platform **6ft or higher** (not from a motor vehicle or aircraft)
- ☐ Raised surface or platform **less than 6 ft high** (not from a motor vehicle or aircraft)
- ☐ Level surface such as floor or ground (e.g., slipped, tripped)
- ☐ Other (**Please Specify**) _____

Have you been seen by a medical professional for injury #1?

- ☐ Yes
- ☐ No

Which type of medical professional did you see for injury #1? (Select all that apply)

- ☐ Medic
- ☐ Physician Assistant (PA)
- ☐ Nurse
- ☐ Physician (Doctor)
- ☐ Not sure

Were you placed on temporary profile for injury #1?

- ☐ Yes
- ☐ No

If you were placed on temporary profile for injury #1, how many days? **(If not applicable, please enter '0')**

Number of Days ____

For unit PT, do you know what alternative exercises you can do while on profile?

- ☐ Yes
- ☐ No
- ☐ N/A (I can still perform unit PT with no problems and do not need to perform alternative exercises)

What impact does injury #1 currently have on your physical activity or job duties?

- ☐ No impact
- ☐ Little impact
- ☐ Some impact
- ☐ Significant impact
- ☐ Unable to perform military duties as assigned
- ☐ Other (**Please Specify**) _____

Did injury #1 occur while:

- ☐ During work
- ☐ Before/after work

These next questions will ask about injury #2 that you experienced in the past 12 mnths

Estimate the approximate date of the injury #2 (past 12 months, not including July 2014).

- ☐ June 2014
- ☐ May 2014
- ☐ April 2014
- ☐ March 2014
- ☐ February 2014
- ☐ January 2014
- ☐ December 2013
- ☐ November 2013
- ☐ October 2013
- ☐ September 2013
- ☐ August 2013
- ☐ July 2013
- ☐ June 2013
- ☐ May 2013

Primary body area injured?

- ☐ Head
- ☐ Neck
- ☐ Shoulders
- ☐ Upper Arm (bicep/tricep)
- ☐ Lower Arm (forearm)
- ☐ Elbow

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- ☐ Wrist
- ☐ Hand
- ☐ Chest/ribs
- ☐ Abdomen
- ☐ Back (lower)
- ☐ Back (upper)
- ☐ Spine
- ☐ Hip
- ☐ Upper Leg (thigh/hamstring)
- ☐ Lower Leg (Shin/calf)
- ☐ Knee
- ☐ Ankle
- ☐ Foot
- ☐ Other (**Please Specify**) _____
- ☐ Heat/cold injury - Non-specific body area

Type of injury #2?

- ☐ Abrasion
- ☐ Blister
- ☐ Bruise
- ☐ Bursitis
- ☐ Cut/laceration
- ☐ Dislocation
- ☐ Fascitis
- ☐ Fracture/Break
- ☐ Heat injury
- ☐ Nerve injury
- ☐ Sprain/strain overuse
- ☐ Sprain/strain traumatic
- ☐ Tear (muscle/ligaments)
- ☐ Blunt force trauma
- ☐ Spinal injury (i.e. bulging or slipped disk)
- ☐ Other (**Please Specify**) _____

Activity associated with the injury #2?

- ☐ Gunshot, missile, or blast
- ☐ Lifting or moving heavy objects
- ☐ Physical training
- ☐ Repairing or maintaining equipment
- ☐ Riding or driving in a motorized vehicle
- ☐ Rough-housing or fighting
- ☐ Sports/recreation
- ☐ Stepping/climbing
- ☐ Walking or Hiking
- ☐ Marching - with load
- ☐ Marching - No load
- ☐ Other (**Please Specify**) _____

Please specify the sport causing the injury #2:

- ☐ Football
- ☐ Basketball
- ☐ Soccer
- ☐ Volleyball
- ☐ Softball/baseball
- ☐ Running (e.g., road racing/marathons)
- ☐ Other (**Please Specify**) _____

If injury #2 was from Physical training, please specify.

- ☐ Running
- ☐ Weight-training
- ☐ Extreme conditioning
- ☐ Other (**Please Specify**) _____

While injured in a motorized vehicle you were...

- ☐ Driving a military vehicle
- ☐ Riding in a military vehicle
- ☐ Driving a civilian vehicle
- ☐ Riding in a civilian vehicle

Cause associated with the injury #2?

- ☐ Falling onto an object/surface/the ground
- ☐ Contact (hit by/against) a raised object/surface (**Please Specify Object**) _____

- ☐ Cut or puncture by a sharp tool, object or instrument
- ☐ Direct contact by a person
- ☐ Impact from a blast
- ☐ Overuse/repetitive activity (**List activity**) _____
- ☐ Single twisting/over-extension
- ☐ Single overexertion effort - moved too fast, too much weight
- ☐ Specific military task (e.g. parachuting) (**Please Specify**) _____
- ☐ Burn (by fire, hot substance or object, or steam)
- ☐ Heat injury
- ☐ Cold injury
- ☐ Animal bite
- ☐ Insect bite
- ☐ Other (**Please Specify**) _____

If injury #2 was from a fall, please specify. Fall was from...

- ☐ Motor vehicle
- ☐ Aircraft
- ☐ Raised surface or platform **6ft or higher** (not from a motor vehicle or aircraft)
- ☐ Raised surface or platform **less than 6 ft high** (not from a motor vehicle or aircraft)
- ☐ Level surface such as floor or ground (e.g., slipped, tripped)

☐ Other (**Please Specify**) _____

Have you been seen by a medical professional for injury #2?

- ☐ Yes
- ☐ No

Which type of medical professional did you see for injury #2? (Select all that apply)

- ☐ Medic
- ☐ Physician Assistant (PA)
- ☐ Nurse
- ☐ Physician (Doctor)
- ☐ Not sure

Were you placed on temporary profile for injury #2?

- ☐ Yes
- ☐ No

If you were placed on temporary profile for injury #2, how many days? (If not applicable, please enter '0')

Number of Days ____

For unit PT, do you know what alternative exercises you can do while on profile?

- ☐ Yes
- ☐ No
- ☐ N/A (I can still perform unit PT with no problems and do not need to perform alternative exercises)

What impact does injury #2 currently have on your physical activity or job duties?

- ☐ No impact
- ☐ Little impact
- ☐ Some impact
- ☐ Significant impact
- ☐ Unable to perform military duties as assigned
- ☐ Other (**Please Specify**) _____

Did injury #2 occur while:

- ☐ During work
- ☐ Before/after work

Physical Demands for Work Performance

Select the category below that best describes the lifting activities required to do your job (amount of weight and frequency of lifting):

- ☐ **No Lifting** (lifting is always less than 10 pounds)
- ☐ **Light:** Frequent or constant lifting of 10 pounds, with occasional lifting up to 20 pounds
- ☐ **Medium:** Frequent or constant lifting of 25 pounds, with occasional lifting up to 50 pounds

- ☐ **Moderately Heavy:** Frequent or constant lifting of 40 pounds, with occasional lifting up to 80 pounds
- ☐ **Heavy:** Frequent or constant lifting of 50 pounds, with occasional lifting up to 100 pounds
- ☐ **Very Heavy:** Frequent or constant lifting in excess of 50 pounds, with occasional lifting over 100 pounds

Select the category below that best describes the overall amount of aerobic activity (e.g., that increases breathing rate) required to do your job:

- ☐ **None** - not physical; activities are sedentary
- ☐ **Light** - limited or occasional strenuous high energy activities
- ☐ **Moderate** - most days involve strenuous high energy activities
- ☐ **High** - every day involves long periods (many hours) of high energy activities

Do you currently participate in unit PT (i.e., road marching, running, calisthenics, or strength training with your unit)?

- ☐ Yes
- ☐ No

How would you rate your unit PT?

- ☐ Challenging
- ☐ Hard
- ☐ Somewhat Hard
- ☐ Moderate
- ☐ Easy

Are new Soldiers to your unit slowly introduced to unit PT, giving them time to adapt?

- ☐ Yes
- ☐ No

What is your unit PT program primarily based on:

- ☐ Traditional Army PT (Running, Push-ups, Sit-ups)
- ☐ Physical Readiness Training (PRT)
- ☐ Cross-training
- ☐ Extreme conditioning (e.g., P90X, CrossFit, Insanity)
- ☐ Combination of these programs **(Please specify)** _____
- ☐ Other **(Please Specify)** _____

On average, how often do you participate in unit PT each week?

- ☐ 1-2 times per week
- ☐ 3-5 times per week
- ☐ 6-7 times per week
- ☐ More than 7 times per week

Unit Physical Training (PT)

For distance running (running continuously for 1 mile or greater) with your unit, please select your average **DISTANCE** (miles per time you ran) and **FREQUENCY** (number of times per week) during the typical week over the last 12 months

On average, how many times per week did you perform distance running with your unit in the last 12 months?

	Non e	<1 time per week	2 time s per week	3 time s per week	4 time s per week	5 time s per week	6 times per week	7 time s per week	> 7 times per week
<u>Unit</u> <u>distance</u> <u>running</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Each time you ran with your unit, on average, how many miles did you run?

	Non e	< 1 mile	1 mile	2 mile s	3 mile s	4 mile s	5 mile s	6 mile s	7 mile s	> 7 miles
<u>Unit</u> <u>distance</u> <u>running</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Have any of the following exercises been added to your unit's resistance training program within the last 6 months (Select all that apply):

- ☐ No new exercises have been added
- ☐ Kettlebells
- ☐ Tire Flipping
- ☐ Sled dragging
- ☐ Bands and Chains
- ☐ Rope Swinging
- ☐ Other (Please Specify) _____

For the below listed exercise activities with your unit, please select your average **FREQUENCY** (number of times per week) and **DURATION** (minutes per event) of participation during the typical week over the last 12 months

On average, how many times per week did you perform the activity in the last 12 months?

	None	< 1 time per week	1 time per week	2 times per week	3 times per week	4 times per week	5 times per week	6 times per week	7 times per week	> 7 times per week
<u>Sprinting/Interval Training</u> (Sprints are short bursts of speed that cannot be sustained for more than a few minutes. Intervals are short periods of high speed running mixed with periods of jogging or walking)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<u>Calisthenics</u> (e.g., jumping jacks, windmills, mountain climbers, etc.)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<u>Cross-training type of exercises</u> (e.g., circuit training, combination of exercises to work various parts of the body)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<u>Agility drills</u> (e.g., drills requiring lateral movements, typically using cones or ladders, obstacle course, etc.) approximately how many times per week	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<u>Resistance training</u> (e.g., weight lifting using free weights, dumbbells, kettlebells, hammer-strength machines, etc.)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

On average, how many minutes per event did you perform this activity in the last 12 months

None	< 15 minutes	16-30 minutes	31-45 minutes	46-60 minutes	61-75 minutes	76-90 minutes	> 90 minutes
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Sprinting/Interval

Training (Sprints are short bursts of speed that cannot be sustained for more than a few minutes. Intervals are short periods of high speed running mixed with periods of jogging or walking)

Calisthenics (e.g., jumping jacks, windmills, mountain climbers, etc.)?

Cross-training type of exercises (e.g., circuit training, combination of exercises to work various parts of the body)

Agility drills (e.g., drills requiring lateral movements, typically using cones or ladders, obstacle course, etc.)

approximately how many times per week

Resistance training (e.g., weight lifting using free weights, dumbbells, kettlebells, hammer-strength machines, etc.)?

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Unit Road Marches

On average, how many times per month did you perform road marching with your unit in the last 12 months?

None	< 1 time per month	1 time per month	2 times per month	3 times per month	4 times per month	> 4 times per month
------	--------------------	------------------	-------------------	-------------------	-------------------	---------------------

**Road
Marches**

☐ ☐ ☐ ☐ ☐ ☐ ☐

Each time you road marched with your unit, on average, how many miles did you road march?

	None	1-3 miles	4-6 miles	7-10 miles	11-15 miles	> 15 miles
<u>Road Marches</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

On average, how heavy was your March load each time you marched

	< 10 lbs	10-30lbs	31-50 lbs	51-75 lbs	> 75 lbs
<u>Road Marches</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Personal Physical Training (PT)

Do you perform PT on your own time?

- ☐ Yes
- ☐ No

What is your primary goal of personal PT?

- ☐ Lose weight
- ☐ Gain muscle mass
- ☐ Increase aerobic capacity
- ☐ Increase aerobic capacity and gain muscle mass
- ☐ Maintain current fitness levels
- ☐ Unit PT is not challenging so I need additional PT to maintain my fitness levels

What program is your personal physical training program primarily based on:

- ☐ Traditional Army PT (Running, Push-ups, Sit-ups)
- ☐ Physical Readiness Training (PRT)
- ☐ Cross-training
- ☐ Extreme conditions (e.g., P90X, CrossFit, Insanity)
- ☐ Combination of these programs (**Please specify**) _____
- ☐ Other (**Please specify**) _____

For Distance running (running continuously for 1 mile or greater) for personal PT, please select your average DISTANCE (miles per time you ran) and FREQUENCY (number of times per week) during the typical week over the last 12 months

On average, how many times per week did you run for personal PT in the last 12 months

	None	< 1 time per week	1 time per week	2 times per week	3 times per week	4 times per week	5 times per week	6 times per week	7 times per week	> 7 times per week
<u>Personal</u> <u>PT</u> <u>Distance</u> <u>running</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Each time you ran for personal PT, on average, how many miles did you run?

	None	< 1 mile	1 mile	2 miles	3 miles	4 miles	5 miles	6 miles	7 miles	> 7 miles
<u>Personal PT</u> <u>Distance</u> <u>running</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For the below listed exercise activities for personal PT, please select your average FREQUENCY (number of times per week) and DURATION (minutes per event) of participation during the typical week over the last 12 months

On average, how many times per week did you perform the activity in the last 12 months?

	None	< 1 time per wk	1 time per wk	2 times per wk	3 times per wk	4 times per wk	5 times per wk	6 times per wk	7 times per wk	> 7 times per wk
<u>Sprinting/Interval</u> <u>Training</u> (Sprints are short bursts of speed that cannot be sustained for more than a few minutes. Intervals are short periods of high speed running mixed with periods of jogging or walking)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Calisthenics (e.g.,

jumping jacks,
windmills, mountain
climbers, etc.)

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Cross-training type of

exercises (e.g., circuit
training, combination of
exercises to work
various parts of the
body)

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Agility drills (e.g., drills
requiring lateral
movements, typically
using cones or ladders,
obstacle course, etc.)

approximately how
many times per week

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Aerobic endurance
activities that do NOT
involve running (e.g.,
elliptical machines,
rowing machine,
cycling, stair stepper)

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Resistance training

(e.g., weight lifting using
free weights, dumbbells,
kettlebells, hammer-
strength machines, etc.)

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

On average, how many minutes per event did you perform this activity in the last 12 months

None < 15 16-30 31-45 46-60 61-75 76-90 > 90
minutes minutes minutes minutes minutes minutes minutes minutes

Sprinting/Interval
Training

(Sprints are short
bursts of speed that
cannot be sustained
for more than a few
minutes. Intervals are
short periods of high
speed running mixed
with periods of jogging
or walking)

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Calisthenics (e.g.,

jumping jacks,
windmills, mountain
climbers, etc.)

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Cross-training type

of exercises (e.g.,

circuit training,
combination of
exercises to work
various parts of the
body)

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Agility drills (e.g.,

drills requiring lateral
movements, typically
using cones or
ladders, obstacle
course, etc.)

approximately how
many times per week

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Aerobic endurance

activities that do

NOT involve running

(e.g., elliptical
machines, rowing
machine, cycling, stair
stepper)

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Resistance training

(e.g., weight lifting
using free weights,
dumbbells, kettlebells,
hammer-strength
machines, etc.)

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Exercise Equipment (Unit and Personal PT)

Exercise Equipment use and availability

	Available - USED this equipment/area	Available - NOT USED	Not Available
Treadmills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stationary Bicycles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stairmasters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Free Weights	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Kettlebells	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tires to Flip	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sled to drag or push	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ropes to climb or swing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bands and Chains for weight training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Universal Weight Training Equipment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nautilus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pull-up Bar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Swimming Facility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Basketball Court	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tennis Court	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Racquetball/Squash Court	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Baseball/Softball Field	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Soccer Field	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Track	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Running area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Outdoor Bicycles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Was there other equipment available that you used or did not use **(Please specify)**?

Tobacco Use

Did you grow up in a household of one or more smokers?

- ☐ Yes
☐ No

Have you smoked more than 100 cigarettes in your life? (100 cigarettes=5 packs)

- ☐ Yes
☐ No

About how old were you when you started smoking for the first time?

- ☐ 6 - ☐ >50

How many total years and/or months have you smoked?

Number of years _____
Number of months _____

Have you smoked in the last 30 days?

- ☐ I have smoked in the last 30 days
- ☐ I have **NOT** smoked in the last 30 days
- ☐ I have **QUIT** smoking and have not smoked in the last 30 days

If you have quit smoking, how many months or years ago did you quit? (If not applicable, please enter '0')

Years quit _____

Months quit _____

In the past 30 days, how many days did you smoke?

- ☐ 1 - ☐ 30

In the last 30 days, how many cigarettes on average PER DAY?

Cigarettes per day on average _____

How long have you been smoking? (If not applicable, please enter '0')

Number of years currently smoking _____

Number of months currently smoking _____

Smokeless Tobacco

Have you ever used smokeless tobacco (chewing tobacco, snuff, dip, etc.)?

- ☐ Yes
- ☐ No

Have you used smokeless tobacco (chewing tobacco, snuff, dip, etc.) in the last 30 days?

- ☐ I have used smokeless tobacco in the last 30 days
- ☐ I have **NOT** used smokeless tobacco in the last 30 days
- ☐ I have **QUIT** using smokeless tobacco, and have not used in the last 30 days

If you have quit using smokeless tobacco, how long ago did you quit? (If not applicable, please enter '0')

Years quit ____

Months quit ____

How many days did you use smokeless tobacco in the last 30 days

- ☐ 1 - ☐ 30

How many cans, pouches, or plugs did you use PER DAY on average in the last 30 days? (If not applicable, please enter '0')

Number of Cans _____

Number of Pouches _____

Number of Plugs _____

How long have you been using smokeless tobacco? (If not applicable, please enter '0')

Years used ____

Months used ____

Dietary Supplements and Prescriptions

Do you take dietary supplements?

- ☐ Yes
- ☐ No

What dietary supplements do you take? (Select all that apply)

- ☐ Vitamins/multivitamin
- ☐ Weight loss supplements
- ☐ Performance/muscle enhancement supplements
- ☐ Nutrition enhancement supplements
- ☐ Healthy joint supplements
- ☐ Other **(Please Specify)** _____

What reasons do you take dietary supplements? (Select all that apply)

- ☐ Promote general health
- ☐ Give more energy
- ☐ Greater muscle strength
- ☐ Performance enhancer
- ☐ Healthy joints
- ☐ Weight loss
- ☐ Increased endurance
- ☐ Not sure
- ☐ Other **(Please Specify)** _____

(Females) Do you take oral contraceptives?

- ☐ Yes
- ☐ No
- ☐ Not Applicable - I am a male

Leadership and Medical Support

Does your unit have an assigned Master Fitness Trainer (MAT)?

- ☐ Yes
- ☐ No
- ☐ Not sure

Is there an Army Wellness Center (AWC) on your installation?

- ☐ Yes
- ☐ No
- ☐ Not sure

Have you been evaluated at the Army Wellness Center?

- ☐ Yes
- ☐ No

Your unit leadership encourages physical training in a safe way that strives to increase fitness but reduce or minimize injuries.

- ☐ Strongly agree
- ☐ Agree
- ☐ Disagree
- ☐ Strongly Disagree

Does your unit or physical training leader describe common causes of training injury and provide recommendations to reduce injuries?

- ☐ Routinely
- ☐ Occasionally
- ☐ Rarely
- ☐ Never

Does your unit or physical training leader provide information about status of unit injuries and causes?

- ☐ Routinely
- ☐ Occasionally
- ☐ Rarely
- ☐ Never

Your current unit has a higher than normal rate of physical training related injuries?

- ☐ Strongly agree
- ☐ Agree
- ☐ Disagree
- ☐ Strongly Disagree
- ☐ Not Sure

This is the end of the survey. If you need to review your responses or make changes to the survey, please use the Back button at the bottom of your screen.